



Commonwealth of Kentucky
Department for Medicaid Services
Division of Program Quality and Outcomes

EPSDT Encounter Data Validation: Dental Services

FINAL REPORT
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Introduction and Background

Early and Periodic Screening, Diagnostic and Treatment (EPSDT) services is a federally mandated health program for Medicaid enrollees, which provides comprehensive and preventive health care services for children and adolescents up to age 21 years. EPSDT screening services include a comprehensive health and developmental history, comprehensive unclothed physical exam, appropriate immunizations according to the Advisory Committee on Immunization Practices, laboratory tests including lead toxicity screening, and health education that includes anticipatory guidance regarding child development, healthy lifestyles and accident and injury prevention.¹ In Kentucky, specific age-appropriate assessments of growth and development, vision, hearing and oral health are included in EPSDT screening services based on the American Academy of Pediatrics (AAP) periodicity schedule.² Diagnostic and treatment services for illnesses and conditions identified through EPSDT screening are also part of EPSDT services.

As per the Medicaid website of the Centers for Medicare and Medicaid (CMS), dental services are an important part of comprehensive services under EPSDT, and referral to a dentist is required consistent with Kentucky's periodicity schedule.³ Covered dental services include maintenance of dental health, restoration of teeth, relief of pain and infections, and services to address any conditions identified during screening. National studies have shown that not all eligible children receive all components of needed services.⁴ The receipt of recommended dental care is among the services noted to be lacking for publicly insured children in national health care utilization surveys, although there has been improvement over the past several years.^{5 6 7} These surveys revealed that the Kentucky rate of receipt of recommended preventive dental services (42.6%) and recommended dental treatment services (21.1%) were below the national median (47.5% and 22.8%, respectively) for these services.⁸

IPRO conducted studies to validate Kentucky Medicaid managed care (MMC) EPSDT visit codes in 2014 and 2015. The 2014 study revealed opportunity for improvement in the receipt of comprehensive EPSDT screenings during well-child visits, and oral health assessment was among the specific identified gaps in care. Although rates of oral health assessment during EPSDT visits showed significant improvement in 2015 over 2014 results (61% versus 50%, $P < 0.01$), there is still opportunity for improvement in this area, especially for adolescents, for whom only 52% had an oral health assessment documented. The 2015 study also identified continued opportunity for improvement in the rate of children and adolescents who were documented to be under the care of a dentist or had a referral to a dentist, with a rate of only 16%. Strikingly, 35% of all study sample members, and 44% of adolescents, had neither an assessment of oral health needs during their EPSDT visit nor a referral for dental care.

In order to support Kentucky's ongoing focus on oral health care in the Healthy Smiles Kentucky and other statewide initiatives ("Healthy Kentucky Smiles," 2006) these findings were explored in more detail to determine if dental services codes for comprehensive, periodic and limited dental exams as well as for preventive services and restorative dental treatments are documented in dental records.

Objectives

This study aims to validate EPSDT-related dental exam visit, preventative services and restorative treatment procedure claim codes by comparing dental record documentation and submitted dental encounter data for children enrolled in Kentucky MMC, and describe age-appropriate EPSDT dental services provided during dental visits. The specific objective is to investigate whether dental record documentation of dental visits identified by encounter data submission include documentation of dental exam components for a comprehensive, periodic or limited oral examination, as recommended by the American Academy of Pediatric Dentistry (AAPD) and in accordance with the Kentucky Medicaid Dental Periodicity Schedule, including: health history, chief complaint, oral exam components, caries risk assessment, behavior assessment, and dental health education that includes anticipatory guidance regarding nutrition, accident and injury prevention, and oral hygiene. The study also aims to assess whether dental record documentation supports claims

submitted for preventive services and restorative dental treatment procedures and the extent to which diagnostic and treatment services are planned for problems identified during EPSDT dental exams.

Methodology

Eligible Population

The eligible population from which a dental record sample was drawn includes Kentucky MMC-enrolled children who were six months through 20 years of age by September 30, 2015, and had one EPSDT-related dental exam visit during the study period of January 1, 2015 to September 30, 2015.

Scope of Review

A random sample of 600 MMC members was selected from the eligible population stratified by managed care organization (MCO) and age group. For each MCO, the eligible population was stratified into four age groups: ages 6 months–2 years (started 6 months of age through the end of second year by September 30, 2015; referred to as “infant and toddlers” from here on), ages 3–4 years (started third year through end of fourth year by September 30, 2015; referred to as “preschool children” from here on), ages 5–11 years (started fifth year through the end of 11th year by September 30, 2015; referred to as “school-aged children” from here on), and ages 12–20 years (started 12th year through the end of 20th year by September 30, 2015; referred to as “adolescents” from here on). The samples for each of the five MCOs, therefore, consisted of 120 enrollees; a total of 40 enrollees for the infants/toddlers and preschool children, 40 enrollees for the school-aged and 40 enrollees for the adolescent age groups including an oversample of 20 members per MCO. This sampling strategy provided for subgroups that were large enough to allow for statistical comparison, where indicated by frequencies, of the differing subgroups within the study sample.

Data Collection

A retrospective dental record review of eligible EPSDT-related dental exam visits during the measurement period January 1, 2015 to September 30, 2015 among members in the study sample was conducted. In order to ensure consistent samples across plans, eligible EPSDT-related dental visits were identified for members who had one dental exam date of service (DOS) during the review period. However, three study sample members had two exam claims submitted on the same exam DOS during the review period. All members therefore only had the dental record reviewed for the one exam DOS. The three members with two exam claims only had one of the submitted exam claims validated as detailed within the report in the relevant exam section. The following Current Dental Terminology (CDT) exam codes were submitted for the dental record review study sample: Comprehensive Oral Evaluation, CDT- D0150; Periodic Oral Exam, CDT-D0120; and Limited Oral Evaluation, CDT- D0140. All preventive services and restorative treatment procedure CDT claim codes submitted on the same date as the exam date of service (DOS) were reviewed for dental record documentation. The following preventive services and diagnostic and restorative treatment procedure claim codes were submitted for members on their exam DOS:

- Preventive Services (when submitted as a second code paired with an oral exam code)
 - § Dental Prophylaxis (CDTs-D1120 and D1110)
 - § Fluoride Treatment (CDTs-D1203, D1204, and D1208)
 - § Topical Fluoride Varnish (CDT- D1206)
 - § Oral Hygiene Instruction (CDT-D1330)
 - § Sealants (CDT-D1351-per tooth)
- Diagnostic and Restorative Dental Treatments (when submitted as a second code paired with an oral exam code)
 - § Diagnostic Imaging/X-rays (CDTs-D0210, D0220, D0230, D0270, D0272, D0274, and D0330)
 - § Extractions (CDTs-D7111, D7140, D7210, and D7240)
 - § Fillings (CDTs-D2140, D2150, D2160, D2330, D2332, D2335, D2391, D2392, and D2394)
 - § Crowns (CDT-D2930)
 - § Analgesia (CDTs-D9220 and D9230)
 - § Therapeutic Pulpotomy (CDT-D3220)

§ Pulp capping (CDT-D3110)

§ Palliative Treatment of Dental Pain (CDT-D9110)

Dental records for relevant exams during the review period were requested from the following MCOs: Anthem Blue Cross and Blue Shield (BCBS) Medicaid, CoventryCares of Kentucky (now operating as Aetna Better Health¹), Humana-CareSource, Passport Health Plan and WellCare of Kentucky.

All records were abstracted by IPRO nurse reviewers using an electronic tool containing all study indicators, including all oral exam components, routine preventive services and restorative treatments in accordance with The Kentucky Dental Periodicity Schedule and AADP guidelines.^{9 10} Documented dental abnormalities on the exam DOS with the action plan for each identified problem including plans for further testing/diagnostic procedures were also abstracted. Chief complaint and provider documentation of exam type were collected to assess coding practices for EPSDT dental exam visits.

Dental records were excluded if incomplete documentation was submitted for the exam DOS, or if the chart was illegible.

Demographic information for each member in the study sample was collected from the enrollment data housed in IPRO's data warehouse (administrative data) and pre-populated into the electronic review tool.

Dental Record Review

IPRO developed a dental record abstraction tool for the study in collaboration with the Kentucky Department for Medicaid Services (DMS). To help standardize the abstraction process, a record review tool and detailed instructions for each element, including requirements for indicator compliance, clear definitions for elements and likely location of the elements in the dental records were developed for the review. An electronic tool was created in Microsoft Access, with training provided for IPRO nurse reviewers. Each nurse reviewer achieved greater than 95% accuracy on test charts prior to beginning chart abstractions. Inter-rater reliability (IRR) testing was conducted to evaluate the performance of the nurse reviewers at the outset, and regular oversight was conducted throughout the review process through weekly over-reads of a minimum of 5% of reviewed charts. All nurse abstractor reviewers maintained a performance of at least 95% accuracy throughout the oversight process. The cumulative abstraction accuracy rate for the over-read was 99.7%.

Dental Record Disposition

Table 1 shows the overall disposition of records. Of the total of 600 charts requested, 586 charts were received. The final chart retrieval rate (97.7%) includes 574 valid charts that were reviewed and 12 charts that were excluded due to incomplete and/or illegible documentation for the exam DOS. Among the final study sample of 574 members, for whom the dental record was reviewed, 59 members (10%) were infants and toddlers, 131 members (23%) were preschool children, 190 members (33%) were school-aged children, and 194 members (34%) were adolescents.

¹ Aetna Better Health operated as CoventryCares Kentucky at the time the study sample was obtained.

Table 1: Overall Disposition of Records

Dental Records	Anthem BCBS Medicaid	Aetna Better Health	Humana-CareSource	Passport Health Plan	WellCare of Kentucky	Total
Records requested	120	120	120	120	120	600
Records received	112	118	118	120	118	586
Total retrieval rate	93.30%	98.30%	98.30%	100.00%	98.30%	97.70%
Infants and toddlers (ages 6 months–2 years)	11	10	13	13	12	59
Preschool children (ages 3–4 years)	29	30	26	27	27	139
School-aged children (ages 5–11 years)	35	38	40	40	39	192
Adolescents (ages 12–20 years)	37	40	39	40	40	196
Incomplete documentation for DOS ¹	7	0	1	0	4	12
Total excluded	7	0	1	0	4	12
Valid records received						
Final study sample	105	118	117	120	114	574
Infants and toddlers (ages 6 months–2 years)	11	10	13	13	12	59
Preschool children (ages 3–4 years)	23	30	26	27	25	131
School-aged children (ages 5–11 years)	35	38	40	40	37	190
Adolescents (ages 12–20 years)	36	40	38	40	40	194

¹ Excluded records had illegible or incomplete documentation, e.g., no provider notes, for the date of service DOS reviewed.

BCBS: Blue Cross and Blue Shield.

Results

Member Characteristics

Demographics and EPSDT Dental Coding

Overall, approximately one-third of the infants, toddlers, children and adolescents in the study were in each of the study age groups: 10.28% were infants and toddlers (59/574) and 22.82% were preschool children for a combined 33.10% (190/574), 33.10% (190/574) were school-aged children and 33.80% (194/574) were adolescents (Table 1, Table 2). The members' gender, race, residence and eligibility category were obtained from administrative data. Overall, 51.74% of the children and adolescents in the sample were female, and there were more female than male members in each age group (Table 2). Just over half of members in the sample were white (51.74%); 10.28% were black, 10.63% were reported as "other race," 6 members were Asian or Pacific Islander (1.05%), one member was American Indian or Alaskan Native (0.17%), and race was "not provided" for 26.13% of the members (Table 2).

Urban counties in Kentucky included Boone, Bourbon, Boyd, Bracken, Bullitt, Campbell, Christian, Clark, Daviess, Edmonson, Fayette, Gallatin, Grant, Greenup, Hancock, Hardin, Henderson, Henry, Jefferson, Jessamine, Kenton, Larue, McLean, Meade, Nelson, Oldham, Pendleton, Scott, Shelby, Simpson, Spencer, Trigg, Trimble, Warren, Webster and Woodford Counties, while the remaining counties were considered rural (DMS, personal communication, 2013; Table 2). Over half (53.83%) of the members in the study sample resided in an urban area, including 49.15% of infants and toddlers, 55.73% of preschool children, 53.16% of school-aged children, and 54.64% of adolescents. Overall, 46.16% of the members resided in a rural area; 31.18% resided in Appalachia, including 32.20% of infants and toddlers, 32.82% of preschool children, 28.42% of school-aged children and 32.47% of adolescents, while overall 14.98% resided in a non-Appalachian rural area, including 18.64% of infants and toddlers, 11.45% of preschool children, 18.42% of school-aged children and 12.89% of adolescents (Table 2).

Eligibility category was obtained from administrative data. There were 30 members, including one infant, 3 preschool children, 7 school-aged children and 19 adolescents with Supplemental Security Income (SSI; 5.23%) and 15 who were in foster care (2.61%; Table 2).

Primary language could not be determined from documentation in the majority (93.73%) of dental records; overall, 5.05% and 0.87% of records documented English and Spanish, respectively, and 2 members (0.35%) documented "other" as the member's primary language (Table 2).

Documentation Characteristics

The majority (67.07%) of the dental records, overall, as well as for each age group in the study sample, were electronic dental records (Table 2).

Table 2: Demographics by Age Group

Demographics	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
MCO	59	10.28%	131	22.82%	190	33.10%	194	33.80%	574	100.00%
Aetna Better Health	10	16.95%	30	22.90%	38	20.00%	40	20.62%	118	20.56%
Anthem BCBS Medicaid	11	18.64%	23	17.56%	35	18.42%	36	18.56%	105	18.29%
Humana-CareSource	13	22.03%	26	19.85%	40	21.05%	38	19.59%	117	20.38%
Passport Health Plan	13	22.03%	27	20.61%	40	21.05%	40	20.62%	120	20.91%
WellCare of Kentucky	12	20.34%	25	19.08%	37	19.47%	40	20.62%	114	19.86%
Gender										
Female	30	50.85%	66	50.38%	103	54.21%	98	50.52%	297	51.74%
Male	29	49.15%	65	49.62%	87	45.79%	96	49.48%	277	48.26%
Race/Ethnicity										
American Indian or Alaskan Native	0	0.00%	0	0.00%	0	0.00%	1	0.52%	1	0.17%
Asian or Pacific Islander	0	0.00%	1	0.76%	3	1.58%	2	1.03%	6	1.05%
Black	6	10.17%	12	9.16%	21	11.05%	20	10.31%	59	10.28%
Hispanic	0	0%	0	0%	0	0%	0	0%	0	0%
Not Provided	17	28.81%	44	33.59%	41	21.58%	48	24.74%	150	26.13%
Other race or ethnicity	8	13.56%	12	9.16%	22	11.58%	19	9.79%	61	10.63%
Unable to determine	0	0%	0	0%	0	0%	0	0%	0%	0%
White	28	47.46%	62	47.33%	103	54.21%	104	53.61%	297	51.74%
Region ¹										
Urban	29	49.15%	73	55.73%	101	53.16%	106	54.64%	309	53.83%
Rural, Appalachian	19	32.20%	43	32.82%	54	28.42%	63	32.47%	179	31.18%
Rural, non-Appalachian	11	18.64%	15	11.45%	35	18.42%	25	12.89%	86	14.98%
Eligibility category										
Supplemental Security Income (SSI)	1	1.69%	3	2.29%	7	3.68%	19	9.79%	30	5.23%
Foster care	0	0.00%	1	0.76%	5	2.63%	9	4.64%	15	2.61%
Primary language										
English	7	11.86%	6	4.58%	7	3.68%	9	4.64%	29	5.05%
Spanish	1	1.69%	2	1.53%	2	1.05%	0	0.00%	5	0.87%
Other	1	1.69%	1	0.76%	0	0.00%	0	0.00%	2	0.35%
Unable to determine	50	84.75%	122	93.13%	181	95.26%	185	95.36%	538	93.73%

Demographics	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Medical record type										
Electronic	42	71.19%	90	68.70%	140	73.68%	113	58.25%	385	67.07%
Paper	17	28.81%	41	31.30%	50	26.32%	81	41.75%	189	32.93%

¹ Urban counties include: Boone, Bourbon, Boyd, Bracken, Bullitt, Campbell, Christian, Clark, Daviess, Edmonson, Fayette, Gallatin, Grant, Greenup, Hancock, Hardin, Henderson, Henry, Jefferson, Jessamine, Kenton, Larue, McLean, Meade, Nelson, Oldham, Pendleton, Scott, Shelby, Simpson, Spencer, Trigg, Trimble, Warren, Webster, and Woodford Counties. All other counties were designated as rural.

BCBS: Blue Cross and Blue Shield.

EPSDT-Related Service Claims by Code and by Age Group

It should be noted that the Kentucky DMS Dental Fee Schedule was revised and updated since the study sample was obtained, so that some of the exam and preventive services claim codes that were in effect for the study sample, are different from those now listed on the currently effective DMS Dental Fee Schedule. The changes will be detailed in the relevant sections that follow. Additionally, it should be noted that for some services and procedures codes, e.g., fillings and x-rays, members had more than one claim submitted so that the number of claims presented in Table 3 represent the maximum percent of study sample members with the claim submitted (Table 3).

Oral Exams

All of the members in the dental record review sample had one dental exam DOS with an exam claim (CDT codes: Comprehensive Oral Evaluation, D0150; Periodic Oral Exam, D0120; Limited Oral Evaluation, D0140) submitted during the review period. All preventive services and diagnostic and restorative treatment procedure claims submitted for the dental exam indicator DOS were reviewed for validation of dental record documentation. Overall, among the final study sample, 81.18% (466/574) of members had a Comprehensive Oral Evaluation claim submitted (Table 3), including 97.14% of Anthem BCBS Medicaid, 92.37% of Aetna Better Health/CoventryCares of Kentucky, 67.52% of Humana-CareSource, 53.33% of Passport Health Plan, and 98.25% of WellCare of Kentucky members.² Overall, 15.85% of study sample members had a Periodic Oral Exam claim submitted, including 1.90% of Anthem BCBS Medicaid, 3.39% of Aetna Better Health/CoventryCares of Kentucky, 27.35% of Humana-CareSource, and 44.17% of Passport Health Plan members; none of the WellCare of Kentucky study sample members had a Periodic Oral Exam claim code submitted. Overall, 3.48% of members had an exam claim submitted for a Limited Oral Evaluation, including 0.95% of Anthem BCBS Medicaid, 5.08% of Aetna Better Health/CoventryCares of Kentucky, 5.13% of Humana-CareSource, 4.17% of Passport Health Plan, and 1.75% of WellCare of Kentucky members (Table 3).

Preventive Services

Prophylaxis

There are two claim codes on the current Kentucky DMS Dental Fee Schedule³ as well as on the Schedule in effect for the claims under review for prophylaxis—generally referred to as “cleaning”—Child Prophylaxis (CDT-D1120) for prophylaxis services to children age 13 and younger and Adult Prophylaxis (CDT-D1110) for services for adolescents over age 14. Overall, the majority of members had a claim code for dental prophylaxis (521/574) submitted on the exam DOS, and most members (73.17%) had a Child Prophylaxis (CDT-D1120) claim, while 17.60% of members had an Adult Prophylaxis (CDT-D1110) claim submitted on the exam DOS, including 68.57% and 20.95% of Anthem BCBS Medicaid members; 76.27% and 16.95% of Aetna Better Health/CoventryCares of Kentucky; 73.50% and 13.68% of Humana-CareSource; 76.67% and 18.33% of Passport Health Plan; and 70.18% and 18.42% of WellCare of Kentucky members, for child and adult prophylaxis, respectively.

Fluoride Application Treatments

² Three members (IPRO IDs C95, P249, and P314) had both a Comprehensive Oral Evaluation claim (CDT-D0150) and a Periodic Oral Exam claim (CDT-D0120) submitted on the same exam DOS; claims data from the IPRO data warehouse show for the Coventry/Aetna member, the former exam claim was paid and for both Passport members the latter exam claims were paid. Therefore, these MCO's exam claims percentages as well as total exam claims percentages are greater than 100%.

³ Both the current (effective date February 5, 2016) and previous (effective April 1, 2009 and ongoing including the time of the claims under review) Kentucky DMS Dental Fee Schedules indicate that the “child prophylaxis” claim code (CDT-D1120) should be used for children of age 13 years and younger while the “adult prophylaxis” claim code D1110 should be used for adolescents of age 14 years and older. Both fee schedules are available at: <http://chfs.ky.gov/dms/dental+rates.htm>; <http://chfs.ky.gov/NR/rdonlyres/D17764C7-8FFD-4585-B7ED-5D09ADDF4D5B/0/December2015DentalFeeScheduleEffective252016.pdf>; downloaded on 7/20/2016.

The Kentucky DMS Dental Fee Schedule in effect for the claims under review only lists one claim code (CDT-D1203) for Topical Application of Fluoride for all members under the age of 21, whereas the current Kentucky DMS Dental Fee Schedule lists two claim codes for the Topical Application of Fluoride (CDT-D1208, which in most CDT manuals includes “Excluding Varnish” in the code description), and for Fluoride Varnish (CDT-D1206) for all members under age 21.⁴ The Topical Application of Fluoride Adult (CDT- D1204) is not on either DMS Fee Schedule. Overall, the majority (82.40%) of members had a claim for a fluoride treatment submitted on the exam DOS, and most frequently, members had a claim for Topical Fluoride Application Excluding Varnish (CDT-D1208), including 74.29% of Anthem BCBS Medicaid, 83.90% of Aetna Better Health/CoventryCares of Kentucky, 79.49% of Humana-CareSource, 83.33% of Passport Health Plan, and 79.82% of WellCare of Kentucky members. In total 6 members had a claim submitted (1.05%) for Fluoride Varnish (CDT-D1206), 5 members had claims (0.87%) for Topical Application of Fluoride Child (CDT-D1203) and one member had a claim (0.17%) for Topical Application of Fluoride Adult (CDT-D1204).

Oral Hygiene Instruction

Only five members overall (0.87%) had a claim submitted for Oral Hygiene Instruction (CDT-D1330)—one Aetna Better Health/CoventryCares of Kentucky member, and four Humana-CareSource members (Table 3).

Sealants

The current Kentucky DMS Dental Fee Schedule, as well as the schedule in effect for the claims under review, list one Sealant (CDT-D1351) claim code that should be submitted for each tooth treated, for children ages 5 to 20 years and most members with a sealant claim had more than one sealant claim submitted. Overall 99 sealant claims were submitted on the exam DOS, including 17 claims for Anthem BCBS Medicaid, 24 claims for Aetna Better Health/CoventryCares of Kentucky, 27 claims for Humana-CareSource, 17 claims for Passport Health Plan, and 14 claims for WellCare of Kentucky.

Diagnostic and Restorative Procedures

Diagnostic Imaging (x-rays)

The current Kentucky Medicaid Dental Fee Schedule, as well as the Schedule in effect for the claims under review, provide seven claim codes for diagnostic imaging, commonly known as x-rays, specifically indicating the location and number of images: Intraoral Complete Series (CDT-D0210), Periapical First Film (CDT-D0220) and Intraoral Periapical, each additional (CDT-D0230); Bitewing Single Image (CDT-D0270); Dental Bitewings Two Images (CDT-D0272); Bitewings Four Images (CDT-D0274); and Panoramic Image (CDT-D0330; Table 3). A total of 669 diagnostic imaging claims were submitted for study sample members, and some members with an x-ray claim had more than one type of claim code submitted.

In total, only 4 members had a claim for an Intraoral Complete Series (CDT-D0210), including one member at each of the following plans: Anthem BCBS Medicaid, Aetna Better Health/CoventryCares of Kentucky, Passport Health Plan, and WellCare of Kentucky. In total, 123 claims were submitted for Periapical First Film (CDT-D0220), and 101 claims for Intraoral Periapical, each additional (CDT-D0230), which includes up to 9.52% and 2.86%, of Anthem BCBS Medicaid members (some members had more than one of these x-ray claims), up to 22.88% and 22.03%, of Aetna Better Health/CoventryCares of Kentucky members, up to 34.19% and 32.48%, of Humana-CareSource members, up to 16.67%

⁴ The Kentucky DMS Dental Fee Schedule in effect for the claims under review only indicates one claim code (D1203) for Topical Application of Fluoride for all members under the age of 21, whereas the current Kentucky Fee Schedule indicates two claim codes for the Topical Application of Fluoride, Excluding Varnish (CDT-D1208) and Fluoride Varnish (CDT-D1206) for all members under age 21. Both fee schedules are available at: <http://chfs.ky.gov/dms/dental+rates.htm>; <http://chfs.ky.gov/NR/rdonlyres/D17764C7-8FFD-4585-B7ED-5D09ADDF4D5B/0/December2015DentalFeeScheduleEffective252016.pdf>; downloaded on 7/20/2016.

and 13.33%, of Passport Health Plan members, and up to 22.81% and 15.79% of WellCare of Kentucky members, respectively (Table 3).

Only one WellCare of Kentucky member had a claim code submitted for a Bitewing Single Image (CDT-D0270). By type, Dental Bitewings Two Images was the most frequently submitted x-ray claim (CDT-D0272) with 206 claims in total, including up to 33.33% of Anthem BCBS Medicaid, up to 34.75% of Aetna Better Health/CoventryCares of Kentucky, up to 37.61% of Humana-CareSource, up to 34.17% of Passport Health Plan, and up to 39.47% of WellCare of Kentucky members. A total of 91 Bitewings Four Images (CDT-D0274) claims were submitted for up to 15.85% of members overall: 18.10% of Anthem BCBS Medicaid, 16.10% of Aetna Better Health/CoventryCares of Kentucky, 18.80% of Humana-CareSource, 15.00% of Passport Health Plan, and 11.40% of WellCare of Kentucky members (Table 3).

Overall, 143 Panoramic Image (CDT-D0330) claims were submitted, including 26.67% of Anthem BCBS Medicaid, 27.12% of Aetna Better Health/CoventryCares of Kentucky, 22.22% of Humana-CareSource, 27.50% of Passport Health Plan, and 21.05% of WellCare of Kentucky members (Table 3).

Fillings

The current Kentucky Dental Fee Schedule, as well as the Schedule in effect for the claims under review list a total of twelve claim codes for fillings, specific to the filling material (amalgam or resin) and number of surfaces treated on each tooth; additionally, resin-based claim codes note the location of the tooth (anterior/posterior), while amalgam claims note whether the tooth was primary or permanent. In total, 46 fillings claims were submitted on the exam DOS. In total, 46 fillings claims were submitted for study sample members, and because some members had more than one filling claim this represents a maximum of up to 8.01% of all study sample members with a filling claim. Overall, only four claims for Amalgam One Surface (CDT-D2140) were submitted on the exam DOS: one for Anthem BCBS Medicaid, two for Aetna Better Health/CoventryCares of Kentucky, and one for Humana-CareSource; none were submitted for Passport Health Plan or WellCare of Kentucky. Only one claim was submitted for Amalgam Two Surfaces Permanent (CDT-D2150) and for Amalgam Three Surfaces Permanent (CDT-D2160) for Anthem BCBS Medicaid.

Overall, Humana-CareSource and WellCare of Kentucky each had two claims submitted for Resin –Based Composite, One Surface Anterior (CDT-D2330). Only Aetna Better Health had one claim code submitted for Resin Three Surface Anterior (CDT-D2332). Aetna Better Health had six claims, and WellCare of Kentucky had one claim codes for Resin–Based Composite, > Four Surfaces Anterior, with Incisor (CDT-D2335) submitted. A total of 21 claim codes were submitted for Resin–Based Composite, One Surface Posterior (CDT-D2391): 7 for Anthem BCBS Medicaid, 3 for Aetna Better Health/CoventryCares of Kentucky, 5 for Humana-CareSource, and 6 for Passport Health Plan; this claim code was not submitted for any WellCare of Kentucky members. A total of six claims were submitted for Resin–based Composite, Two Surfaces Posterior (CDT-D2392); two claims each were submitted for Anthem BCBS Medicaid, Humana-CareSource, and Passport Health Plan. Only Anthem BCBS had one claim submitted for Resin Composite Posterior >4 Surfaces Posterior (CDT-D2394).

Crowns

The current Kentucky DMS Dental Fee Schedule, as well as the schedule in effect for the claims under review, list three claim codes for restorative crowns, specific to the material and whether the tooth treated was permanent or primary. In total, Anthem BCBS Medicaid had one and Humana-CareSource had three claim codes submitted for Prefabricated, Stainless Steel Crown (CDT-D2930).

Pulp Procedures

Passport Health had two claims submitted for Pulp Capping (CDT-D3110); Anthem BCBS Medicaid and Humana-CareSource each had one claim submitted for a Therapeutic Pulpotomy (CDT-D3220).

Extractions

In total, 23 claims were submitted for the various types of extraction procedures. A total of five claims were submitted for Extraction of Coronal Remnants (CDT-D7111): one claim for Aetna Better Health and two claims each for Humana-CareSource and WellCare of Kentucky. For Extraction of Erupted Tooth (CDT-D7140), a total of 12 claims were submitted: one claim each for Anthem BCBS and Humana-CareSource, 2 claims each for Passport Health Plan and WellCare of Kentucky, and 6 claims for Aetna Better Health. Humana-CareSource is the only Plan with 2 claims submitted for Removal of Impacted Tooth with Mucoper Flap (CDT-D7210) as well as with the 4 claims submitted for Impacted Tooth Removal Completely Bony (CDT-D7240).

Pain Management

Aetna Better Health and Humana-CareSource each had one claim submitted for Treatment of Minor Dental Pain (CDT-D9110) and General Anesthesia (CDT-D9220), respectively. Aetna Better Health had four claims, and Humana-CareSource had three claims submitted for Analgesia (CDT-D9230).

Table 3: Frequency of EPSDT-Related Dental Service Claims by CDT Code and by MCO as a Percent of Study Sample Members

EPSDT-Related Service Claims	Anthem BCBS Medicaid (n = 105) 18.29%		Aetna Better Health (n = 118 ¹) 20.56%		Humana- CareSource (n = 117) 20.38%		Passport Health Plan (n = 120 ¹) 20.91%		WellCare of Kentucky (n = 114) 19.86%		Total (n = 574) ¹	
Oral exams ¹												
D0150-Comprehensive Oral Evaluation	102	97.14%	109	92.37%	79	67.52%	64	53.33%	112	98.25%	466	81.18%
D0120-Periodic Oral Exam	2	1.90%	4	3.39%	32	27.35%	53	44.17%	0	0.00%	91	15.85%
D0140-Limited Oral Evaluation	1	0.95%	6	5.08%	6	5.13%	5	4.17%	2	1.75%	20	3.48%
Preventive services												
Dental prophylaxis												
D1120-Prophylaxis Child	72	68.57%	90	76.27%	86	73.50%	92	76.67%	80	70.18%	420	73.17%
D1110-Prophylaxis Adult	22	20.95%	20	16.95%	16	13.68%	22	18.33%	21	18.42%	101	17.60%
Prophylaxis total	94	89.52%	110	93.22%	102	87.18%	114	95.00%	101	88.60%	521	90.77%
Fluoride treatment												
D1203 Topical App. Fluoride Child (under age 21)	3	2.86%	0	0.00%	2	1.71%	0	0.00%	0	0.00%	5	0.87%
D1204 Topical App. Fluoride Adult (age 21 and older)	0	0.00%	0	0.00%	0	0.00%	1	0.83%	0	0.00%	1	0.17%
D1208 Topical App. Fluoride (Exc. Varnish)	78	74.29%	99	83.90%	93	79.49%	100	83.33%	91	79.82%	461	80.31%
D1206 Topical Fluoride Varnish	3	2.86%	0	0.00%	0	0.00%	3	2.50%	0	0.00%	6	1.05%
Fluoride treatment total	84	80.00%	99	83.90%	95	81.20%	104	86.67%	91	79.82%	473	82.40%
Oral Hygiene Instruction												
D1330 Oral Hygiene Instruction	0	0.00%	1	0.85%	4	3.42%	0	0.00%	0	0.00%	5	0.87%
Sealants												
D1351-Per Tooth	17	16.19%	24	20.34%	27	23.08%	17	14.17%	14	12.28%	99	17.25%
Diagnostic and restorative procedures												
Diagnostic imaging (x-ray)												
D0210 Intraoral Complete Film Series (Including Bitewings)	1	0.95%	1	0.85%	0	0.00%	1	0.83%	1	0.88%	4	0.70%
D0220 Intraoral Periapical First (First Film)	10	9.52%	27	22.88%	40	34.19%	20	16.67%	26	22.81%	123	21.43%
D0230 Intraoral Periapical, each additional	3	2.86%	26	22.03%	38	32.48%	16	13.33%	18	15.79%	101	17.60%

EPSDT-Related Service Claims	Anthem BCBS Medicaid (n = 105) 18.29%		Aetna Better Health (n = 118 ¹) 20.56%		Humana- CareSource (n = 117) 20.38%		Passport Health Plan (n = 120 ¹) 20.91%		WellCare of Kentucky (n = 114) 19.86%		Total (n = 574) ¹	
D0270 Dental Bitewing Single Image	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	0.88%	1	0.17%
D0272 Dental Bitewing Two Images	35	33.33%	41	34.75%	44	37.61%	41	34.17%	45	39.47%	206	35.89%
D0274 Bitewings Four Images	19	18.10%	19	16.10%	22	18.80%	18	15.00%	13	11.40%	91	15.85%
D0330 Panoramic Image	28	26.67%	32	27.12%	26	22.22%	33	27.50%	24	21.05%	143	24.91%
Total Diagnostic imaging (x-ray)	96	91.43%	146	123.73 %	170	145.30 %	129	107.50 %	128	112.28 %	669	116.55 %
Fillings												
D2140 Amalgam One Surface Permanent	1	0.95%	2	1.69%	1	0.85%	0	0.00%	0	0.00%	4	0.70%
D2150 Amalgam Two Surfaces Permanent	1	0.95%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	0.17%
D2160 Amalgam Three Surfaces Permanent	1	0.95%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	0.17%
D2330 Resin-based Composite, One Surface, Anterior	0	0.00%	0	0.00%	2	1.71%	0	0.00%	2	1.75%	4	0.70%
D2332 Resin Composite, Three Surfaces, Anterior	0	0.00%	1	0.85%	0	0.00%	0	0.00%	0	0.00%	1	0.17%
D2335 Resin, 4/> Surfaces, or with incisor, Anterior	0	0.00%	6	5.08%	0	0.00%	0	0.00%	1	0.88%	7	1.22%
D2391 Resin Composite, One Surface, Posterior	7	6.67%	3	2.54%	5	4.27%	6	5.00%	0	0.00%	21	3.66%
D2392 Resin, Two Surfaces, Posterior	2	1.90%	0	0.00%	2	1.71%	2	1.67%	0	0.00%	6	1.05%
D2394 Resin, ≥ 4Surfaces, Posterior	1	0.95%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	0.17%
Total Fillings	13	12.38%	12	10.17%	10	8.55%	8	6.67%	3	2.63%	46	8.01%
Crowns												
D2930 Prefabricated, Stainless Steel Crown	1	0.95%	0	0.00%	3	2.56%	0	0.00%	0	0.00%	4	0.70%
Pulp procedures												
D3110 Pulp Capping	0	0.00%	0	0.00%	0	0.00%	2	1.67%	0	0.00%	2	0.35%
D3220 Therapeutic Pulpotomy	1	0.95%	0	0.00%	1	0.85%	0	0.00%	0	0.00%	2	0.35%
Extractions												
D7111 Extraction Coronal Remnants	0	0.00%	1	0.85%	2	1.71%	0	0.00%	2	1.75%	5	0.87%
D7140 Extraction Erupted Tooth	1	0.95%	6	5.08%	1	0.85%	2	1.67%	2	1.75%	12	2.09%

EPSDT-Related Service Claims	Anthem BCBS Medicaid (n = 105) 18.29%		Aetna Better Health (n = 118 ¹) 20.56%		Humana- CareSource (n = 117) 20.38%		Passport Health Plan (n = 120 ¹) 20.91%		WellCare of Kentucky (n = 114) 19.86%		Total (n = 574) ¹	
D7210 Removal Impacted Tooth with Mucoper Flap	0	0.00%	0	0.00%	2	1.71%	0	0.00%	0	0.00%	2	0.35%
D7240 Impacted Tooth Remove Completely Bony	0	0.00%	0	0.00%	4	3.42%	0	0.00%	0	0.00%	4	0.70%
Total Extractions	1	0.95%	7	5.93%	9	7.69%	2	1.67%	4	3.51%	23	4.01%
Pain management												
D9110 Treatment Dental Pain, Minor Procedure	0	0.00%	1	0.85%	0	0.00%	0	0.00%	0	0.00%	1	0.17%
D9220 General Anesthesia	0	0.00%	0	0.00%	1	0.85%	0	0.00%	0	0.00%	1	0.17%
D9230 Analgesia	0	0.00%	4	3.39%	3	2.56%	0	0.00%	0	0.00%	7	1.22%

¹ Three members (IPRO IDs C95, P249, and P314) had both a Comprehensive Oral Evaluation claim (CDT-D0150) and a Periodic Oral Exam claim (CDT-D0120) submitted on the same exam DOS; for the Coventry/Aetna member, the Comprehensive exam claim was paid and for both Passport members the Periodic exam claims were paid. Therefore, these Plans' exam claims and total exam claims percentages are greater than 100%. It should be noted that for some services and procedures code, e.g., fillings, members had more than one claim submitted so that the percentages shown represent the maximum number of members with the claim submitted.

CDT: Current Dental Terminology; MCO: managed care organization; BCBS: Blue Cross and Blue Shield.

Study Indicator Frequencies and EPSDT-Related Code Validation

This EPSDT dental services encounter data validation study focuses on dental provider oral evaluations and examinations (comprehensive, periodic, and limited), preventive services (prophylaxis, fluoride, sealants and oral hygiene instruction) and diagnostic and restorative dental procedures (x-rays, fillings, crowns, pulp procedures, extractions, and pain management). The frequencies of each type of service evaluated by the age of the study population and CDT code usage are presented below.

Oral Evaluation and Exam Claim Code Type by Age Group

In Kentucky, specific age-appropriate EPSDT dental services are based on the AAP periodicity schedule ("Kentucky: Cabinet for Health and Family Services – EPSDT," 2015). All of the reviewed dental records had a claim submitted for one oral exam (CDTs: D0150-comprehensive, D0120-periodic, or D0140-limited), and all the infant, toddler, children and adolescent dental records were reviewed for AAP recommended components of each exam type, as informed by AAPD clinical practice guidelines and recommendations. The dental record review results are presented by the exam code submitted for each member with the preventive services and restorative procedure claims submitted for those members on the exam DOS presented in a table following each exam type table. The majority (81.18%) of members had a Comprehensive Oral Evaluation (CDT-D0150) claim submitted (Table 4; procedures for these members are presented in Table 5); 15.85% had a Periodic Oral Exam (CDT-D0140) claim submitted (Table 6, procedure codes submitted for these members are presented in Table 7); and 3.48% had Limited Oral Evaluation (CDT-D0120) claim submitted (Table 8, procedure codes submitted for these members are presented in Table 9).⁵

Oral Exam Type/Comprehensive Oral Evaluation by Age Group

The AAPD recommends a dental exam every six months; a comprehensive oral dental exam is recommended when visiting a new provider, or if there is a major change in health history since the most recent visit, otherwise a periodic exam could be one of the bi-annual visits. The AAPD⁶ recommends that during a comprehensive oral exam, a complete health history (including for example, past medical, family, and social histories) be reviewed, a chief complaint, i.e., the reason for the exam, noted, a visual examination of the oral cavity with documentation of relevant clinical components (including, for example, the color, form or number of teeth), as well as assessments be conducted for caries risk, fluoride sources, and behavior, and that anticipatory guidance for nutrition, safety and oral hygiene be provided (Table 4). Additionally, prophylaxis and fluoride treatments are recommended preventive services that should occur during a comprehensive exam.

Overall, 81.18% (466/574) of members in the final study sample had a claim code submitted for a Comprehensive Oral Evaluation (CDT-D0150). In less than half (45.28%) of the dental records for these members, the exam was specifically identified in the documentation by the provider as a comprehensive exam; a general statement for "exam" was frequently documented. The large majority of dental records among members with a comprehensive exam overall (88.41%), as well as by age, had documentation of an extraoral/oral cavity exam, including 94.23% of infant and toddlers, 88.29% of preschool children, 86.84% of school-aged children and 88.08% of adolescents.

⁵ Total exam claims as a percent of study sample members (comprehensive-81.18%; periodic-15.85%, and limited-3.48%; total exams-100.51%) is greater than 100% because 3 members had both a comprehensive and periodic exam claim submitted on the same exam DOS. Only one claim was paid for each member, and exam components in the dental record were validated for each member for one of the exam claims.

⁶ American Academy of Pediatric Dentistry, Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling and Oral Treatment for Infants, Children and Adolescents, V.37 NO6. Available at: http://www.aapd.org/media/Policies_Guidelines/G_Periodicity.pdf. Downloaded on 6/29/2016.

Among these members for whom a Comprehensive Oral Evaluation (CDT-D0150) claim was submitted, the following comprehensive exam components as recommended by the AAPD^{7,8} were documented in the dental record:

Health History

Overall, approximately 90% of members with a comprehensive exam code submitted had at least one component of health history documented in the dental record, including medical history reviewed (73.18%), positive medical issue, i.e., a notation for example of asthma or other medical condition (13.09%), hospitalization/surgery history (21.46%), immunization status (6.01%), allergy status (47.85%), medication status (43.56%), antibiotic prophylaxis status (3.43%), tobacco use assessment (12.02%) and positive tobacco use (0.86% overall, and 2.65% among adolescents) and past dental history (23.18%). The Kentucky EPSDT Periodicity table, in accordance with AAP/AAPD recommendations, calls for the establishment of a dental home, i.e., establishment of an ongoing relationship with a dentist, or usual source of care, for comprehensive and coordinated dental care by 12 months of age. Overall, 62.88% of members with a comprehensive exam had dental record documentation of the provider assessing whether they had a dental home or a usual source of care, for example by indicating “recall” visit; 0.21% of members with a comprehensive exam claim had dental record documentation indicating that the member did not have a usual source of care or a dental home.⁹

Chief Complaint

Overall, 80.26% and 79.18% of members with a comprehensive exam code submitted had “exam” and “cleaning/prophylaxis” documented in the dental record as the chief complaint (most members had more than one reason for the visit documented), including 76.92% and 75.00% of infants and toddlers, 83.78% and 84.68% of preschool children, 75.66% and 75.00% of school-aged children, and 83.44% and 80.79% of adolescents, respectively. In total, less than 5% of members did not have the reason for the visit documented and for less than 2% of members the documented chief complaint was “none.”

Clinical Exam Components

Overall (85.84%), as well as for each age group, the most frequently documented clinical exam component was a notation related to dentition—noting either color, form, number or condition (caries/decay) of teeth. In total, 10.52% of members did not have any clinical exam components documented in the dental record, including 7.69% of infants and toddlers, 9.01% of preschool children, 12.50% of school-aged children, and 10.60% of adolescents.

Caries Risk Assessment¹⁰

The AAPD recommends that all children and adolescents have a caries risk assessment during a dental visit, with a determination of risk level so that management can be tailored to the level of risk. The AAPD recommends that a caries risk assessment include an assessment and documentation of the elements that create a risk for developing caries. These elements are categorized as: “biological”—e.g., the child has high sugar consumption; “protective”—e.g., the child has a non-fluoridated water source; and “clinical findings”—e.g., the provider has noted during an exam that the child has plaque on teeth. In addition to noting specific risks, a determination as to the level of caries risk—low, moderate,

⁷ American Academy of Pediatric Dentistry, Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling and Oral Treatment for Infants, Children and Adolescents, V.37 NO.6. Available at: http://www.aapd.org/media/Policies_Guidelines/G_Periodicity.pdf. Downloaded on 6/29/2016.

⁸ American Academy of Pediatric Dentistry, Guideline on Record Keeping, V. 37 NO. 6. Available at: http://www.aapd.org/media/Policies_Guidelines/G_Recordkeeping.pdf. Downloaded on 6/29/2016.

⁹ American Academy of Pediatric Dentistry, Guidelines on Definition of Dental Home, V.37 NO. 6. Available at: http://www.aapd.org/media/Policies_Guidelines/D_DentalHome.pdf. Downloaded on 8-10-2016.

¹⁰ American Academy of Pediatric Dentistry, Guidelines on Caries-risk Assessment and Management for Infants, Children and Adolescents, V. 37 NO. 6. Available at: http://www.aapd.org/media/Policies_Guidelines/G_CariesRiskAssessment.pdf. Downloaded on 6/29/2016.

high—should be determined so that the need for and frequency of fluoride treatments or other necessary services and procedures can be planned according to the risk level.

The dental records were reviewed for documentation of the individual biological, protective and clinical findings elements of a caries risk assessment as recommended by the AAPD. Approximately one-third (32.62%) of members with a comprehensive exam claim submission did not have any elements of a caries risk assessment documented in the dental record. In total, 67.38% of members had an element of caries risk documented in the dental record, but overall, over half (58.15%) of the members did not have the specific level of risk documented, and had, for example, a statement related to decay, including 44.23% of infants and toddlers, 49.55% of preschool children, 59.87% of school-aged children and 67.55% of adolescents. The specific level of risk was not frequently documented—5.58% had high risk, 1.07% had moderate risk, and 2.58% had low risk documented. It should be noted that Caries Risk Assessment claim codes (Caries Risk Assessment, Low Risk CDT-D0601; Caries Risk Assessment, Moderate Risk CDT-D0602; and Caries Risk Assessment, High Risk CDT-D0603) are not listed on the current Kentucky DMS Dental Fee Schedule or on the Schedule in effect for the study sample. Overall, the majority of members did not have biological (97.00%) or protective (91.85%) risks documented, while, overall, approximately 40% of members had at least one clinical finding documented, including 22.75% with cavities and 19.96% with plaque.

Fluoride Assessment Documented

The AAPD recommends that a fluoride assessment, including the source of fluoride, be conducted during a comprehensive visit so that the risk for caries can be determined, and so that the provider can ensure that the child has “optimal fluoride exposure” to help prevent, inhibit and reverse caries. A fluoride assessment was not documented in the majority of dental records overall (91.85%) or by member age, including 88.46% of infants and toddlers, 87.39% of preschool children, 92.76% of school-aged children, and 95.36% of adolescents. For the majority (95.92%) of members overall, therefore, the fluoride source (i.e., household water or supplements) could not be determined from the dental record documentation.

Prophylaxis

Prophylaxis removes plaque and helps prevent the development of caries. The AAPD recommends the frequency of prophylaxis be based on the assessed level of risk for caries and periodontal disease, and minimally be provided every six months. The majority (90.99%) of members with a comprehensive exam claim submission overall had prophylaxis documented on the comprehensive exam DOS, including 88.46% of infants and toddlers, 94.59% of preschool children, 92.11% of school-aged children, and 88.08% of adolescents.

Topical Fluoride Application

The AAPD recommends topical fluoride applications ideally occur every six months during a comprehensive exam, but the frequency of topical fluoride applications should be tailored to the individual level of caries risk, i.e., a child with high caries risk might need a fluoride application more frequently than every six months. Fluoride treatments can be applied by placing a gel or foam into a tray that remains on the teeth during the visit for a specified amount of time, or fluoride can be directly applied to, or “painted on,” the teeth via “varnish.” Overall, 57.73% of members had a fluoride application documented—primarily as a general statement, e.g., “fluoride application,” or abbreviation, e.g., “Fl Tx.”—in the dental record on the comprehensive exam DOS, including 57.69% of infants and toddlers, 54.05% of preschool children, 60.53% of school-aged children, and 57.62% of adolescents.

Behavioral Assessment

The AAPD recommends documenting behavior during a dental visit to aid in planning for future visits so that the provider can use appropriate pharmacological and non-pharmacological techniques to ensure a safe and positive dental experience, especially for children with special health care needs.

The dental records were reviewed for documentation of cooperative or non-cooperative behavior statements. Overall, 40.56% of members had a cooperative behavior assessment documented in the dental record on the exam DOS, including 59.62% of infants and toddlers, 45.05% of preschool children, 51.97% of school-aged children, and 19.21% of adolescents. In total, 7.30% of members had a non-cooperative behavior assessment documented, including 15.38% of infants and toddlers, 14.41% of preschool children, 5.26% of school-aged children, and 1.32% of adolescents. A behavior assessment was not documented for over half of members (52.15%), including 25.00% of infants and toddlers, 40.54% of preschool children, 42.76% of school-aged children, and 79.47% of adolescents.

Anticipatory Guidance

The AADP recommends that anticipatory guidance be provided during a dental exam for nutrition and diet, oral hygiene and safety. Overall, nutrition and dietary counseling was not well documented in the dental records; 78.33% of members had no nutrition counseling documented, 20.17% had general nutrition, for example a check mark for "nutrition counseling" documented, and less than 2% of members had any of the specific nutrition topics recommended by the AADP documented, such as avoidance of soda or sugar drinks. In total, only three (0.64%) members had safety counseling documented; one preschool member and one school-aged child had general safety counseling, and one adolescent had tobacco avoidance counseling, documented in the dental record. Just under two-thirds (63.52%) of members overall had general oral hygiene counseling; 17.81% of members overall had specific counseling to brush twice daily and 17.17% were counseled to floss daily. Only five (1.07%) members were counseled to have topical fluoride treatments; one member was counseled to use fluoride toothpaste. None of the other AADP recommended oral hygiene counseling topics, such as to avoid taking a bottle to bed, or to use a soft tooth brush were documented in the dental records.

Claim Validation

Overall, the Comprehensive Oral Evaluation claim code (CDT- D0150) was submitted for 81.18% (466/574) of the study sample (Table 4). For the purpose of this claim validation study, IPRO identified the minimum exam components for a comprehensive dental exam should include documentation of at least one component of a health history, such as a review of past medical history, at least one clinical exam component, such as dentition, a chief complaint or reason for the exam, and prophylaxis. A review of the dental records for those members for whom the comprehensive exam code claim was submitted shows the majority (71.03%) overall had dental record documentation meeting the minimum criteria for a comprehensive exam, including 73.08% of infants and toddlers, 75.68% of preschool children, 69.08% of school-aged children, and 68.87% of adolescents¹¹.

¹¹ Two Passport members (ages 4 and 6), had both a comprehensive exam claim and a periodic exam claim submitted on the same exam DOS, and both members had all components of a comprehensive and a periodic exam documented in the dental record. Claims data from the IPRO Data Warehouse show the periodic claim was paid and the comprehensive exam was not paid. Both members were removed from the comprehensive exam validation above, i.e., the number of preschool children with "all elements of a comprehensive exam" was reduced from 85 to 84, and the number of school-aged children with all elements of a comprehensive exam was reduced from 106 to 105.

Table 4: Oral Exam Type - Dental Record Documentation for Members with Comprehensive Oral Evaluation Claim, by Age

Oral Exam Evaluation Components (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n= 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Identified by dental provider as a comprehensive oral evaluation in dental record	20	38.46%	39	35.14%	80	52.63%	72	47.68%	211	45.28%
Extraoral/Oral cavity/Periodontal/Occlusion exam	n = 52		n = 111		n = 152		n = 151		n = 466	
Yes	49	94.23%	98	88.29%	132	86.84%	133	88.08%	412	88.41%
No	3	5.77%	13	11.71%	20	13.16%	18	11.92%	54	11.59%
Health history obtained	n = 52		n = 111		n = 152		n = 151		n = 466	
Medical history reviewed	43	82.69%	88	79.28%	112	73.68%	98	64.90%	341	73.18%
Positive medical issue	6	11.54%	11	9.91%	22	14.47%	22	14.57%	61	13.09%
Hospitalization/Surgery History	14	26.92%	27	24.32%	35	23.03%	24	15.89%	100	21.46%
Immunization Status	5	9.62%	10	9.01%	10	6.58%	3	1.99%	28	6.01%
Allergies Status	34	65.38%	59	53.15%	76	50.00%	54	35.76%	223	47.85%
Medication Status	30	57.69%	55	49.55%	62	40.79%	56	37.09%	203	43.56%
Antibiotic Prophylaxis	3	5.77%	4	3.60%	5	3.29%	4	2.65%	16	3.43%
Tobacco use assessment	4	7.69%	9	8.11%	21	13.82%	22	14.57%	56	12.02%
Positive tobacco use	0	0.00%	0	0.00%	0	0.00%	4	2.65%	4	0.86%
Past dental history	13	25.00%	18	16.22%	39	25.66%	38	25.17%	108	23.18%
Dental home status	26	50.00%	60	54.05%	99	65.13%	108	71.52%	293	62.88%
No dental home documented	0	0.00%	1	0.90%	0	0.00%	0	0.00%	1	0.21%
None	7	13.46%	10	9.01%	18	11.84%	12	7.95%	47	10.09%
Chief complaint	n = 52		n = 111		n = 152		n = 151		n = 466	
Exam	40	76.92%	93	83.78%	115	75.66%	126	83.44%	374	80.26%
Cleaning/Prophylaxis	39	75.00%	94	84.68%	114	75.00%	122	80.79%	369	79.18%
Initial visit/Establish dental home	22	42.31%	31	27.93%	31	20.39%	19	12.58%	103	22.10%
Pain	1	1.92%	2	1.80%	6	3.95%	9	5.96%	18	3.86%
Acute trauma	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Second opinion/Referral	0	0.00%	1	0.90%	0	0.00%	1	0.66%	2	0.43%
Restorative care	0	0.00%	2	1.80%	11	7.24%	12	7.95%	25	5.36%
Recall	2	3.85%	8	7.21%	22	14.47%	11	7.28%	43	9.23%
Swelling	0	0.00%	1	0.90%	0	0.00%	0	0.00%	1	0.21%

Oral Exam Evaluation Components (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n= 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Other	1	1.92%	4	3.60%	8	5.26%	3	1.99%	16	3.43%
None	1	1.92%	0	0.00%	2	1.32%	5	3.31%	8	1.72%
Not documented	4	7.69%	4	3.60%	11	7.24%	4	2.65%	23	4.94%
Clinical exam components	n = 52		n = 111		n = 152		n = 151		n = 466	
Dental exam (color, form, number)/Caries	47	90.38%	95	85.59%	129	84.87%	129	85.43%	400	85.84%
Normal occlusion (bite test)	27	51.92%	54	48.65%	85	55.92%	56	37.09%	222	47.64%
Examine maxillary incisors	21	40.38%	46	41.44%	71	46.71%	54	35.76%	192	41.20%
Upper/Lower lip/Buccal mucosa	38	73.08%	74	66.67%	93	61.18%	80	52.98%	285	61.16%
Plaque accumulation/Gum line exam	35	67.31%	75	67.57%	105	69.08%	101	66.89%	316	67.81%
Pressure point tenderness	0	0.00%	1	0.90%	0	0.00%	0	0.00%	1	0.21%
Fissures	0	0.00%	0	0.00%	2	1.32%	2	1.32%	4	0.86%
Palate	43	82.69%	81	72.97%	107	70.39%	89	58.94%	320	68.67%
Tongue	42	80.77%	81	72.97%	107	70.39%	92	60.93%	322	69.10%
Oropharynx	43	82.69%	81	72.97%	107	70.39%	92	60.93%	323	69.31%
TMJ Assessment	30	57.69%	54	48.65%	77	50.66%	62	41.06%	223	47.85%
Neck/Lymph	27	51.92%	53	47.75%	70	46.05%	57	37.75%	207	44.42%
None of the above	4	7.69%	10	9.01%	19	12.50%	16	10.60%	49	10.52%
Caries risk assessment	n = 52		n = 111		n = 152		n = 151		n = 466	
No	19	36.54%	41	36.94%	46	30.26%	46	30.46%	152	32.62%
Yes	33	63.46%	70	63.06%	106	69.74%	105	69.54%	314	67.38%
Yes, high risk	2	3.85%	10	9.01%	12	7.89%	2	1.32%	26	5.58%
Yes, moderate risk	1	1.92%	1	0.90%	2	1.32%	1	0.66%	5	1.07%
Yes, low risk	7	13.46%	4	3.60%	1	0.66%	0	0.00%	12	2.58%
Yes, risk level not documented	23	44.23%	55	49.55%	91	59.87%	102	67.55%	271	58.15%
Elements of caries risk documented	n = 52		n = 111		n = 152		n = 151		n = 466	
Biological										
Caregiver has active caries	2	3.85%	0	0.00%	0	0.00%	0	0.00%	2	0.43%
Low socioeconomic status	2	3.85%	1	0.90%	1	0.66%	0	0.00%	4	0.86%
Child has >3 sugar-containing snacks or beverages/day	1	1.92%	2	1.80%	4	2.63%	0	0.00%	7	1.50%

Oral Exam Evaluation Components (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n= 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Put to bed with a bottle	1	1.92%	1	0.90%	0	0.00%	0	0.00%	2	0.43%
Child has special health care needs	0	0.00%	0	0.00%	1	0.66%	1	0.66%	2	0.43%
Child is a recent immigrant	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	49	94.23%	107	96.40%	146	96.05%	150	99.34%	452	97.00%
Protective										
Non-fluoride water source	0	0.00%	1	0.90%	2	1.32%	2	1.32%	5	1.07%
Poor oral hygiene	1	1.92%	7	6.31%	13	8.55%	8	5.30%	29	6.22%
No dental home/or dental care history	0	0.00%	1	0.90%	2	1.32%	0	0.00%	3	0.64%
No topical fluoride history	1	1.92%	1	0.90%	0	0.00%	0	0.00%	2	0.43%
None	50	96.15%	102	91.89%	135	88.82%	141	93.38%	428	91.85%
Clinical findings										
White spot lesions/enamel defects	0	0.00%	0	0.00%	2	1.32%	2	1.32%	4	0.86%
Visible cavities/fillings	8	15.38%	23	20.72%	43	28.29%	32	21.19%	106	22.75%
Plaque on teeth	3	5.77%	19	17.12%	32	21.05%	39	25.83%	93	19.96%
Elevated <i>Mutans streptococci</i> levels	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Defective restorations	0	0.00%	0	0.00%	2	1.32%	1	0.66%	3	0.64%
Wearing an intraoral appliance	0	0.00%	0	0.00%	2	1.32%	11	7.28%	13	2.79%
None	41	78.85%	74	66.67%	81	53.29%	84	55.63%	280	60.09%
Fluoride assessment documented	n = 52		n = 111		n = 152		n = 151		n = 466	
Yes	6	11.54%	14	12.61%	11	7.24%	7	4.64%	38	8.15%
No	46	88.46%	97	87.39%	141	92.76%	144	95.36%	428	91.85%
Household fluoridated water source	n = 52		n = 111		n = 152		n = 151		n = 466	
Yes	2	3.85%	4	3.60%	2	1.32%	1	0.66%	9	1.93%
No	0	0.00%	3	2.70%	2	1.32%	2	1.32%	7	1.50%
Fluoride supplements	0	0.00%	1	0.90%	2	1.32%	0	0.00%	3	0.64%
Unable to determine	50	96.15%	103	92.79%	146	96.05%	148	98.01%	447	95.92%
Prophylaxis	n = 52		n = 111		n = 152		n = 151		n = 466	
Adult prophylaxis	0	0.00%	0	0.00%	0	0.00%	35	23.18%	35	7.51%
Child prophylaxis	46	88.46%	105	94.59%	140	92.11%	53	35.10%	344	73.82%
Prophylaxis (general statement, age not specified)	0	0.00%	0	0.00%	0	0.00%	45	29.80%	45	9.66%

Oral Exam Evaluation Components (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n= 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Prophylaxis total	46	88.46%	105	94.59%	140	92.11%	133	88.08%	424	90.99%
Topical fluoride application	n = 52		n = 111		n = 152		n = 151		n = 466	
Adult topical application	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Child topical application	4	7.69%	4	3.60%	7	4.61%	12	7.95%	27	5.79%
Topical fluoride application (general statement, age not specified)	26	50.00%	56	50.45%	85	55.92%	75	49.67%	242	51.93%
Topical fluoride application total	30	57.69%	60	54.05%	92	60.53%	87	57.62%	269	57.73%
Behavioral assessment	n = 52		n = 111		n = 152		n = 151		n = 466	
Cooperative	31	59.62%	50	45.05%	79	51.97%	29	19.21%	189	40.56%
Non-cooperative	8	15.38%	16	14.41%	8	5.26%	2	1.32%	34	7.30%
Not documented	13	25.00%	45	40.54%	65	42.76%	120	79.47%	243	52.15%
Anticipatory guidance	n = 52		n = 111		n = 152		n = 151		n = 466	
Nutrition and diet counseling										
Eat healthy snacks	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Eat less-to-no junk food or candy	2	3.85%	1	0.90%	2	1.32%	0	0.00%	5	1.07%
No soda/sugar drinks	1	1.92%	4	3.60%	4	2.63%	0	0.00%	9	1.93%
Xylitol	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No sugar drinks in bed	0	0.00%	1	0.90%	0	0.00%	0	0.00%	1	0.21%
Wean off bottle	2	3.85%	0	0.00%	0	0.00%	0	0.00%	2	0.43%
Less-to-no juice intake	0	0.00%	4	3.60%	2	1.32%	0	0.00%	6	1.29%
Drink tap water/only water in sippy cup	2	3.85%	2	1.80%	3	1.97%	0	0.00%	7	1.50%
General counseling	14	26.92%	27	24.32%	39	25.66%	14	9.27%	94	20.17%
None	35	67.31%	81	72.97%	112	73.68%	137	90.73%	365	78.33%
Safety counseling										
Mouth guard during sports	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Tobacco avoidance counseling	0	0.00%	0	0.00%	0	0.00%	1	0.66%	1	0.21%
General counseling	0	0.00%	1	0.90%	1	0.66%	0	0.00%	2	0.43%
None	52	100.00 %	110	99.10%	151	99.34%	150	99.34%	463	99.36%
Oral hygiene – general counseling										

Oral Exam Evaluation Components (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n= 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Use fluoride toothpaste	1	1.92%	0	0.00%	0	0.00%	0	0.00%	1	0.21%
No sharing of utensils	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fluoridated water source or supplement	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
General counseling	35	67.31%	75	67.57%	105	69.08%	81	53.64%	296	63.52%
Use soft toothbrush	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Avoidance of Bottle in Bed	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Establish a dental home by the age of 12 month by 1st tooth	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Brush twice daily	5	9.62%	14	12.61%	36	23.68%	28	18.54%	83	17.81%
Use clean pacifier	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
If still using bottle, offer only water	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Flossing once daily flossing	4	7.69%	13	11.71%	37	24.34%	26	17.22%	80	17.17%
Regular visits with dentist (twice yearly)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Dental treatments for parents	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride treatments	0	0.00%	1	0.90%	2	1.32%	2	1.32%	5	1.07%
None	17	32.69%	35	31.53%	44	28.95%	64	42.38%	160	34.33%
Comprehensive Oral Evaluation claim code (D0150)	n = 52		n = 111		n = 152		n = 151		n = 466	
Percent of dental records with all elements of a comprehensive exam ^{1, 2}	38	73.08%	84	75.68%	105	69.08%	104	68.87%	331	71.03%

¹ A comprehensive oral exam includes the following components: At least one component documented from the Health History Section; at least one component documented from the Chief Complaint Section; at least one component documented from the Clinical Exam Components Section; Prophylaxis documented.

² Two Passport members (ages 4 and 6), had both a comprehensive exam claim and a periodic exam claim submitted on the same exam DOS, and both members had all components of a comprehensive and periodic exam documented in the dental record. Claims data from the IPRO Data Warehouse show the periodic claim was paid and the comprehensive exam was not paid. Both members were removed from the comprehensive exam validation above, i.e., the number of preschool children with "all elements of a comprehensive exam" was reduced from 85 to 84, and the number of school-aged children with all elements of a comprehensive exam was reduced from 106 to 105. Dark blue: total claims and dental record validation.

Preventive Service and Diagnostic and Restorative Procedure Codes submitted for Members with a Comprehensive Oral Evaluation by Age Group

Members, for whom a Comprehensive Oral Evaluation (CDT- D0150) claim was submitted, also had claims for the following preventive services and diagnostic and restorative procedures submitted on the exam DOS (Table 5):

Prophylaxis

The current Kentucky DMS Dental Fee Schedule, as well as the Schedule in effect for the study sample, notes that an Adult Prophylaxis claim code should be used for members age 14 years and older, and a Child Prophylaxis claim code should be used for younger children. In contrast, the ADA, as well as some other state Medicaid programs (e.g., Maryland's Medicaid Dental Fee Schedule¹²), do not base the code on age, but rather describe child prophylaxis as "performed on primary or transitional teeth", and adult prophylaxis as "performed on transitional or permanent teeth". Overall, an Adult Prophylaxis (CDT-D1110) claim was submitted for 18.88% of the members with a comprehensive oral exam code submitted and all of these members were in the adolescent age group of 12 years and older. All but one of the 88 members that had an adult prophylaxis claim submitted, had documentation of prophylaxis in the dental record; 39.77% had adult prophylaxis specifically documented, 7.95% had child prophylaxis documented and 51.14% had a general "prophylaxis" statement without age specified documented in the dental record. Overall, 73.82% of members who had a comprehensive exam code submitted had a Child Prophylaxis claim (CDT-1120) submitted, including 90.38% of infants and toddlers, 94.59% of preschool children, 94.74% of school-aged children and 31.79% of adolescents. All but nine of these members (97.38%) with a child prophylaxis claim submitted had prophylaxis documented in the dental record.

Fluoride Treatments

The Kentucky DMS Dental Fee Schedule in effect for members in the sample notes that the Adult Topical Fluoride Application code (CDT-1204) should be used for members ages 14 years and older and the Child code (CDT-1203) used for younger members, whereas the current Kentucky DMS Dental Fee Schedule lists only the Topical Fluoride Application—excluding varnish—(CDT-1208) and Topical Fluoride Varnish (CDT-D1206) codes, without age specificity. Only one adolescent member with a comprehensive exam code submitted had an Adult Topical Application of Fluoride (CDT-1204) claim submitted on the exam DOS—this member did not have any fluoride treatment statements documented in the dental record. Two adolescents and two school-aged children had a Child Topical Fluoride (CDT-1203) claim submitted; one of these adolescents had two child fluoride claims submitted. Both adolescents and one of the school-aged members had child prophylaxis documented in their dental records; the other school-aged child had a general fluoride treatment statement, without age specification, documented in the dental record. Overall 80.90% of members had a Topical Fluoride Application Excluding Varnish (CDT-D1208) claim code submitted—although none of these members had an explicit "excluding varnish" statement in the dental record, 69.50% had a general fluoride treatment statement documented and 25.73% had a "fluoride varnish treatment" documented; 18 (4.77%) members did not have any fluoride treatment documented in the dental record. Five members had a Topical Fluoride Varnish (CDT-1206) claim submitted. One member in the infant and toddlers age group had a general topical fluoride application statement documented in the dental record; the three preschool children and one school-aged child had topical fluoride varnish documented in the dental record.

Sealants

¹² Maryland Medicaid Dental Fee Schedule and Procedure Codes CDT 2015. Revision October 2014. Effective Date January 1, 2015. Available at: downloaded, 8/4/2016. The Maryland Fee Schedule notes that code definitions and nomenclature on their schedule are a verbatim reproduction of the *Current Dental Terminology (CDT) 2014 Dental Procedure Codes* copyrighted by the American Dental Association. © 2013 American Dental Association. All rights reserved.

The AAPD recommends dental sealants—a plastic coating applied to the surface of a tooth to create a barrier to acids and plaque—be applied to pits or fissures to prevent decay. Although typically used for a child’s primary teeth, adolescents prone to decay can also benefit from sealants on permanent teeth.

Dental sealant codes are submitted for each tooth treated. Overall, 21 members (4.50%) who had a comprehensive oral exam claim code submitted, had a total of 77 Sealants (CDT-D1351) claims submitted on the exam DOS. All of these members had at least the same number of sealants documented in the dental record as the number of sealant claims submitted, and it should be noted that some of the members had more sealants documented than the number of claims submitted. The Kentucky DMS Dental Fee Schedule states that sealants should be provided for children of age 5 years and older; one preschool child had two sealant claims submitted on the comprehensive exam claim DOS and two sealants were documented in the dental record for this child.

Extractions

When a tooth must be removed for decay, infection or trauma, the extraction can be simple, or require a “surgical” incision. The dental claim codes vary by the complexity of the extraction procedure, i.e., whether or not an incision was required, and the number of teeth being extracted. Overall, 14 (3.00%, 14/466) members with a comprehensive exam claim also had a total of 20 claims submitted for extractions on the exam DOS, and all these members had the number and type of extraction documented in the dental record.

Fillings

Fillings are a restorative material (amalgam, a metal alloy; or resin, a synthetic composite) applied directly to one of the five tooth surfaces (distal, occlusal, buccal, mesial, lingual/palatal), and are referred to by the location of the tooth to which they are applied, i.e., anterior (in the front of the mouth), and posterior (in rear of mouth).

Filling claim codes are specific to the material, location, and number of surfaces treated on each tooth, as well as total number of teeth treated. Overall, the number of surfaces treated was not documented in any dental record, and the tooth location was not always documented. A total of 25 members (5.37%), who had a comprehensive exam claim, also had claims submitted for a filling. All of these members had the type of filling material and number of fillings documented in the dental record corresponding to the filling claim code submitted except the following: one adolescent with six fillings claims submitted for Resin – Four or More Surfaces, Anterior claim code (CDT-D2335) did not have any fillings documented in the dental record; one school-aged child with one Resin – One Surface, Posterior code (CDT-D2391) filling claim and one school- aged child with one Resin – Two Surfaces, Posterior code (CDT-D2392) filling claim submitted, did not have any fillings documented in the dental record.

Diagnostic Imaging/X-Rays

X-ray claims are specific to the location of the tooth/teeth filmed (i.e., bitewings are taken of the posterior teeth), the amount of the oral cavity captured (i.e., periapical x-rays capture the entire tooth down to the tissue at the root), as well as the number of images. Some of the 466 members with a comprehensive oral exam submission had multiple x-ray claims submitted on that same exam DOS and in total, 523 X-ray claims were submitted on the same DOS as a member’s comprehensive oral exam claim submission. All the members with x-ray claims had documentation of the type and number of images in the dental record corresponding to the specific x-ray claim code except the following: for two school-aged children, the provider submitted two Periapical First Image (CDT-D0220) claim codes, for the two documented periapical x-rays, rather than submitting one claim code for the first periapical x-ray, and one claim code for the second/additional tooth (CDT-D0230); and among members with a claim submitted for Bitewings-Two Images (CDT-D0272) on the comprehensive exam DOS, three school-aged children did not have any x-rays documented in the dental record, two school-aged members had *one image* rather than *two images* documented in the dental record, one

school-aged member had an x-ray documented in a general statement, without the x-ray type specified, and one adolescent did not have any x-rays documented in the dental record.

Crowns

The crown of the tooth is the portion that extends above the gum line. When a tooth is damaged beyond what can be restored with a filling, a crown might be placed to cover and support a larger portion of the remaining tooth. A crown can be made of stainless steel which can be covered or replaced with resin for a more cosmetically appealing color to match the actual teeth. Only one school-aged child had a claim submitted for a crown on the comprehensive exam DOS and this member had the crown treatment documented in the dental record.

Therapeutic Pulpotomy

The nerve of the tooth is referred to as the "pulp". A therapeutic pulpotomy is a restorative procedure to remove and/or slow the progression of decay near the tooth's pulp, and the surgical removal of a portion of pulp if necessary to save the remainder of undamaged nerve. Only one school-aged child had a claim submitted for a Therapeutic Pulpotomy (CDT-D3220) on the comprehensive exam DOS and this member had the therapeutic pulpotomy treatment documented in the dental record.

Pulp Capping

Pulp capping is a procedure to prevent the nerve from dying if exposed during a restorative procedure, by placing a protective dressing or cement over the exposed root to protect from injury. In total, only one adolescent member had two claims submitted for Pulp Capping (CDT-D3110) on the comprehensive exam DOS and this member had both pulp capping treatments documented in the dental record.

Pain Management

Both the current Kentucky DMS Dental Fee Schedule and the one in effect for members in the study sample, list Palliative Treatment of Dental Pain (CDT-9110), which is described as appropriate for local anesthetics to prevent pain at the procedure site, as opposed to an inhaled (i.e., nitrous oxide) or intravenous medication analgesia that might be provided for anxiety. Only one school-aged child had a claim submitted for this procedure code on the comprehensive exam DOS; this member had treatment for pain documented in the dental record. One adolescent had a claim submitted for General Anesthesia (CDT-9220) on the comprehensive exam DOS and general anesthesia was documented in the dental record. Neither the current Kentucky DMS Dental Fee Schedule, nor the one in effect for members in the study sample, list the claim code for an Inhaled or Intravenous Analgesia, Anti-anxiety Medication (CDT-D9230), although one preschool child and 4 school aged children had this procedure claim submitted on the comprehensive exam DOS; all 5 children had dental record documentation of analgesia.

Oral Hygiene Instruction

Overall 216 (46.35%) members had oral hygiene instruction documented in the dental record on the comprehensive exam DOS, but only 3 of these members (1 infant/toddler, 1 preschool child and 1 adolescent) had a claim code submitted for Oral Hygiene Instruction (CDT-D1330) on the exam DOS. It should be noted that neither the current Kentucky DMS Dental Fee Schedule, nor the one in effect for the study sample, include the Oral Hygiene Instruction claim code.

Table 5: Preventive Services and Restorative Procedures Claims/Documented Services: Members with a Comprehensive Oral Exam by Age Group

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Prophylaxis/Dental cleaning	n = 52		n = 111		n = 152		n = 151		n = 466	
Total Prophylaxis Claims (D1110 and D1120)	47	90.38%	105	94.59%	144	94.74%	136	90.10%	432	92.70%
Total Prophylaxis documented in dental record	46	97.87%	105	100.00%	138	95.83%	133	97.80%	422	97.69%
No Prophylaxis statement documented in dental record	1	2.13%	0	0.00%	6	4.17%	3	2.21%	10	2.31%
Adult Prophylaxis/Dental Cleaning claim code (D1110) ¹	0	0.00%	0	0.00%	0	0.00%	88	58.28%	88	18.88%
Members with Prophylaxis documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	87	98.86%	87	98.86%
No Prophylaxis statement documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	1	1.14%	1	1.14%
Child Prophylaxis/Dental Cleaning claim code (D1120) ²	47	90.38%	105	94.59%	144	94.74%	48	31.79%	344	73.82%
Members with Prophylaxis documented in dental record	46	97.87%	105	100.00%	138	95.83%	46	95.83%	335	97.38%
No Prophylaxis statement documented in dental record	1	2.13%	0	0.00%	6	4.17%	2	4.17%	9	2.62%
Topical fluoride application/treatment	n = 52		n = 111		n = 152		n = 151		n = 466	
Total Topical Fluoride Application claims codes (D1204, D1203, D1208)	48	92.31%	96	86.49%	137	90.13%	102	67.55%	383	82.19%
Total Fluoride Application statement documented in dental record	48	100.00%	89	92.71%	131	95.62%	95	93.14%	363	94.78%
Total No Fluoride Application statement documented in dental record	0	0.00%	7	7.29%	6	4.38%	7	6.86%	20	5.22%
Number of members with Adult Topical Fluoride Application claim code (D1204) ³	0	0.00%	0	0.00%	0	0.00%	1	0.66%	1	0.21%
Member had Fluoride Application statement in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
No Fluoride Application statement documented in dental record ³	N/A	N/A	N/A	N/A	N/A	N/A	1	100.00%	1	100.00%
Number of Child Topical Fluoride Application claim codes (D1203) ⁴	0	0.00%	0	0.00%	2	1.32%	3	1.99%	5	1.07%
Member had Fluoride Application statement documented in dental record	N/A	N/A	N/A	N/A	2	100.00%	2	66.67%	4	80.00%
No Fluoride Application statement in dental record	N/A	N/A	N/A	N/A	0	0.00%	1	33.33%	1	20.00%
Number of members with Topical Fluoride Application claim code (D1208_Exc. Varnish) ⁵	48	92.31%	96	86.49%	135	88.82%	98	64.90%	377	80.90%
Total Topical Application Fluoride documented in dental record	48	100.00%	89	92.71%	129	95.56%	93	94.90%	359	95.23%
No Fluoride Application statement documented in dental record	0	0.00%	7	7.29%	6	4.44%	5	5.10%	18	4.77%
Topical fluoride varnish	n = 52		n = 111		n = 152		n = 151		n = 466	
Number of members with one Topical Fluoride Varnish claim code (D1206)	1	1.92%	3	2.70%	1	0.66%	0	0.00%	5	1.07%
Total Topical Fluoride Varnish documented in dental record ¹³	1	100.00%	3	100.00%	1	100.00%	N/A	N/A	5	100.00%
No Topical Fluoride Varnish documented in dental record	0	0.00%	0	0.00%	0	0.00%	N/A	N/A	0	0.00%
Dental sealants (per tooth)	n = 52		n = 111		n = 152		n = 151		n = 466	
Total Sealant claims code (D1351) ¹⁴ for 21 members	0	0.00%	2	1.80%	42	27.632%	33	21.85%	77	16.52%
Total Dental Sealants documented in dental record	N/A	N/A	2	100.00%	42	100.00%	33	100.00%	77	100.00%

¹³ Three preschool children and one school-aged child had topical varnish documented in the dental record; one infant/toddler had topical fluoride as a general statement in the dental record.

¹⁴ A total of 21 members with a comprehensive exam claim submitted had a total of 77 sealant claims submitted in the exam DOS.

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
No Dental Sealants documented in dental record	N/A	N/A	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Extractions	n = 52		n = 111		n = 152		n = 151		n = 466	
Total Extraction Claims (Codes: D7111, D7140, D7210,D7240) for 14 members	0	0.00%	1	0.90%	11	7.24%	8	5.30%	20	4.29%
Total Extractions documented in dental record	N/A	N/A	1	100.00%	11	100.00%	8	100.00%	20	100.00%
No Extraction documented in dental record	N/A	N/A	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of members with one Extractions of Coronal Remnants claim code (D7111)	0	0.00%	0	0.00%	2	1.32%	1	0.66%	3	0.64%
Total Extraction of Coronal Remnants documented in dental record	N/A	N/A	N/A	N/A	2	100.00%	1	100.00%	3	100.00%
No Extraction documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Number of Extraction of erupted tooth/exposed root claims code (D7140) for 9 members	0	0.00%	1	0.90%	9	5.92%	2	1.32%	12	2.58%
Member had Extraction of erupted tooth/exposed root documented in dental record	N/A	N/A	1	100.00%	9	100.00%	2	100.00%	12	100.00%
No Extraction documented in dental record	N/A	N/A	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of Surgical Removal of erupted tooth claims code (D7210) for one member	0	0.00%	0	0.00%	0	0.00%	1	0.66%	1	0.21%
Member had one Surgical Removal of erupted tooth documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	1	100.00%	1	100.00%
No Extraction documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Number of Extractions of impacted tooth claims code (D7240) submitted for one member	0	0.00%	0	0.00%	0	0.00%	4	2.65%	4	0.86%
Member had Extractions of impacted teeth documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	4	100.00%	4	100.00%
No Extractions documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Fillings	n = 52		n = 111		n = 152		n = 151		n = 466	
Total Fillings Claims (all codes) for 25 members	0	0.00%	2	1.80%	24	15.79%	16	10.60%	42	9.01%
Total Fillings documented in dental record	N/A	N/A	2	100.00%	22	91.67%	10	62.50%	34	80.95%
No Fillings statement documented in dental record	N/A	N/A	0	0.00%	2	8.33%	6	37.50%	8	19.05%
Number of members with one Filling Amalgam-One Surface, Primary or Permanent claim code (D2140)	0	0.00%	1	0.90%	1	0.66%	1	0.66%	3	0.64%
Member had one Filling Amalgam documented in dental record; one surface, primary or permanent not documented	N/A	N/A	1	100.00%	1	100.00%	1	100.00%	3	100.00%
No Fillings documented in dental record	N/A	N/A	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of members with one Filling Amalgam-Two Surfaces, Primary or Permanent claim code (D2150)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had one Filling Amalgam documented in dental record; two surfaces, primary or permanent not documented	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Number of members with one Filling Amalgam-Three Surfaces, Primary Or Permanent claim code (D2160)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had one Filling Amalgam documented in dental record; three surfaces, primary or permanent, not documented	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Number of Fillings Resin-One Surface, Anterior claims code (D2330) for one member	0	0.00%	0	0.00%	0	0.00%	2	1.32%	2	0.43%
Member had two Fillings Resin material Anterior documented in dental record; one surface not documented	N/A	N/A	N/A	N/A	N/A	N/A	2	100.00%	2	100.00%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Number of Filling Resin-Four or More Surfaces, Anterior claims code (D2335) for two members ¹⁵	0	0.00%	0	0.00%	0	0.00%	7	4.64%	7	1.50%
Member had Filling Resin, Anterior documented in dental record; four or more surfaces not documented	N/A	N/A	N/A	N/A	N/A	N/A	1	14.29%	1	14.29%
No fillings documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	6	85.71%	6	85.71%
Number of Filling Resin-One Surface, Posterior claims code (D2391) for twelve members	0	0.00%	1	0.90%	16	10.53%	4	2.65%	21	4.51%

¹⁵ One adolescent had one filling claim for this code that was documented in the dental record and one adolescent had 6 fillings claims with no fillings documented in the dental record.

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Member had Filling Resin, posterior documented in dental record; one surface not documented ⁹	N/A	N/A	1	100.00%	15	93.75%	4	100.00%	20	95.24%
No Fillings documented in dental record Resin-One Surface, Posterior claim code (D2391)	N/A	N/A	0	0.00%	1	6.25%	0	0.00%	1	4.76%
Number of Filling Resin – Two Surfaces, Posterior claims code (D2392) for four members	0	0.00%	0	0.00%	4	2.63%	2	1.32%	6	1.29%
Member had Filling Resin, posterior documented in dental record; two surfaces not documented ⁹	N/A	N/A	N/A	N/A	3	75.00%	2	100.00%	5	83.33%
No fillings documented in dental record (D2392)	N/A	N/A	N/A	N/A	1	25.00%	0	0.00%	1	16.67%
Number of members with one Filling Resin – Four Or More Surfaces, Posterior claim code (D2394)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had one Filling Resin, posterior documented in dental record; four or more surfaces not documented	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	0	00.00%	N/A	N/A	0	0.00%
Diagnostic imaging/X-rays	n = 52		n = 111		n = 152		n = 151		n = 466	
Total X-ray claims	6	11.54%	78	70.27%	227	149.34%	212	140.40%	523	112.23%
Total x-rays documented in dental record	6	100%	78	100.00%	224	98.68%	211	99.53%	519	99.24%
No X-rays documented in dental record	0	0.00%	0	0.00%	3	1.32%	1	0.47%	4	0.76%
Number of X-ray Intraoral Complete Image Series claims code (D0210) for four members	0	0.00%	0	0.00%	0	0.00%	4	2.65%	4	0.86%

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Member had one X-ray Intraoral Complete Image Series documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	4	100.00%	4	100.00%
No X-rays documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Number of X-ray Intraoral Periapical First Image claims code (D0220) ¹⁰	4	7.69%	25	22.52%	38	25.00%	17	11.26%	84	18.03%
Member had X-ray Intraoral Periapical First Image documented in dental record	4	100.00%	25	100.00%	38	100.00%	17	100.00%	84	100.00%
No X-rays documented in dental record	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of X-rays Intraoral Periapical each additional claims code (D0230)	2	3.85%	22	19.82%	28	18.42%	21	13.91%	73	15.67%
Member had X-ray Intraoral Periapical each additional documented in dental record	2	100.00%	22	100.00%	28	100.00%	21	100.00%	73	100.00%
No X-rays documented in dental record	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of members with one X-ray Bitewing-Single Image claim codes (D0270)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had one X-ray Bitewing-Single Image documented in dental record	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Number of X-rays Bitewing-Two Images claims code (D0272) ¹¹	0	0.00%	31	27.93%	96	63.16%	34	22.52%	161	34.55%
Member had X-ray documented in dental record ¹¹	N/A	N/A	31	100.00%	93	96.88%	33	97.06%	157	97.52%
No documentation of x-rays in dental record on exam DOS.	N/A	N/A	0	0.00%	3	3.13%	1	2.94%	4	2.48%

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Number of members with one X-rays Bitewing-Four Images claim codes (D0274)	0	0.00%	0	0.00%	11	7.24%	67	44.37%	78	16.74%
Member had one X-ray Bitewing-Four Images documented in dental record	N/A	N/A	N/A	N/A	11	100.00%	67	100.00%	78	100.00%
No X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Number of members with one X-rays Panoramic Image claim codes (D0330)	0	0.00%	0	0.00%	53	34.87%	69	45.70%	122	26.18%
Member had one X-ray Panoramic Image documented in dental record	N/A	N/A	N/A	N/A	53	100.00%	69	100.00%	122	100.00%
No Diagnostic Imaging/X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Crown	n = 52		n = 111		n = 152		n = 151		n = 466	
Number of members with one Crown claim code (D2930)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had Crown documented in dental record	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No Crown documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Therapeutic pulpotomy	n = 52		n = 111		n = 152		n = 151		n = 466	
Number of members with one Therapeutic Pulpotomy claim code (D3220)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had Therapeutic Pulpotomy documented in dental record	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No Therapeutic Pulpotomy documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Pulp capping	n = 52		n = 111		n = 152		n = 151		n = 466	

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Number of Pulp Capping claim codes (D3110) for one member ¹⁶	0	0.00%	0	0.00%	0	0.00%	2	1.32%	2	0.43%
Member had Two Pulp Cappings documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	2	100.00%	2	100.00%
No Pulp Cappings documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Pain management	n = 52		n = 111		n = 152		n = 151		n = 466	
Number of members with Palliative Treatment of Dental Pain claim code (D9110)	0	0.00%	0	0.00%	1	0.66%	0	0.00%	1	0.21%
Member had dental pain management documented in dental record	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No dental pain management documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Number of members with General Anesthesia claim code (D9220)	0	0.00%	0	0.00%	0	0.00%	1	0.66%	1	0.21%
Member had anesthesia documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	1	100.00%	1	100.00%
No anesthesia documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Number of members with Analgesia claim code (D9230)	0	0.00%	1	0.90%	4	2.63%	0	0.00%	5	1.07%
Member had analgesia documented in dental record	N/A	N/A	1	100.00%	4	100.00%	N/A	N/A	5	100.00%
No analgesia documented in dental record	N/A	N/A	0	0.00%	0	0.00%	N/A	N/A	0	0.00%
Oral hygiene instructions	n = 52		n = 111		n = 152		n = 151		n = 466	
Number of members with Oral Hygiene Instruction claim code (D1330)	1	1.92%	1	0.90%	0	0.00%	1	0.66%	3	0.64%

¹⁶ One adolescent member had two pulp capping claims submitted on the comprehensive exam DOS, and had 2 pulp capping procedures documented in the dental record.

Preventive Services and Restorative Procedure Claims (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Comprehensive Oral Evaluation claim code (D0150) (n = 466)	n = 52	88.14%	111	84.73%	152	80.00%	151	77.84%	466	81.18%
Member with a D1330 claim submitted had Oral Hygiene Instruction documented in dental record	1	100.00%	1	100.00%	N/A	N/A	1	100.00%	3	100.00%
No Oral Hygiene Instruction documented in dental record for member with claim	0	0.00%	0	0.00%	N/A	N/A	0	0.00%	0	0.00%
Member had Oral Hygiene Instruction documented in dental record without a D1330 claim submitted	24	46.15%	49	44.14%	79	51.97%	61	40.40%	213	45.71%

¹ For adult prophylaxis, 35 adolescents specifically had adult prophylaxis documented (39.77%), 7 adolescents had child prophylaxis documented (7.95%), and 45 adolescents had prophylaxis as a general statement documented (51.14%) in the dental record; one adolescent member did not have dental record documentation of any prophylaxis statement to validate claim. ² For child prophylaxis, a total of 9 members did not have dental record documentation of any prophylaxis to validate claim; 1 infant, 6 school-age children, and 2 adolescents.

³ The one adolescent with an adult fluoride treatment claim did not have medical record documentation of any fluoride treatment statement.

⁴ One school-aged child and 2 adolescents had child fluoride documented in the dental record, and one adolescent had a general fluoride statement documented. One adolescent had two, Child Topical Fluoride Application claim codes (D1203) submitted on the exam DOS, but had only one application documented in the dental record.

⁵ None of the members with this claim had "excluding varnish" documented in the dental record: a total of 262 members (48 infants and toddler, 54 preschool children, 85 school-aged children and 75 adolescents) had a fluoride application as a general statement in the dental record, and a total of 97 members had "varnish" rather than "excluding varnish" documented in the dental record (35 preschool children, 44 school-aged children, and 18 adolescents). A total of 18 members with one Topical Fluoride Application claim code D1208_Exc. Varnish submitted did not have dental record documentation of any fluoride application statement.

⁶ One member (IPRO ID C88) had 2 sealants documented, but only one claim submitted.

⁷ One school-aged and one adolescent member had 4 or more sealants documented in the dental record, but only 3 claims submitted.

⁸ The one adolescent member with six -Fillings Resin-four or more surfaces, Anterior claim code (D2335) submitted, did not have any fillings documented in the dental record.

⁹ One school-aged child (IPRO ID A538) with one Filling Resin-one surface, posterior claim code (D2391) and with one Filling Resin-two surfaces, posterior claim code (D2392) submitted, did not have any fillings documented in the dental record.

¹⁰ For 2 members (IPRO IDS C47 and H190) the provider submitted 2 PA First codes, for the two documented periapical x-rays, rather than submitting one claim code for PA first and one claim code for the additional x-ray.

¹¹ Three school-aged children (IPRO IDs C55, P290, and P318) did not have any x-rays documented in the dental record; two school-aged children (IPRO IDs C50 and A549) had one image rather than two images documented in the dental record; and one school-aged child (IPRO ID W416) had an x-ray documented in a general statement, without the x-ray type specified. One adolescent (IPRO ID A596) did not have any x-rays documented in the dental record.

Brown: no dental record documentation to validate claim; dark blue: total claims and dental record validation; light blue: specific claim code validation within service and/or procedure type; light green: dental record documentation of interest.

Oral Exam Type/Periodic Oral Evaluation by Age Group

The AAPD recommends preventive care visits at least every six months, and recommends that the components of a periodic exam closely follow those of a comprehensive exam (Table 6). It should be noted that Kentucky DMS Dental Fee Schedule in effect for the study sample does not include the Periodic Oral Evaluation (CDT-D0120) claim code, whereas the current DMS Dental Fee Schedule does include this code, and states that it should be limited to "1 per recipient per 12 months."

Overall, 91 (15.85%) study sample members had a claim code submitted for a Periodic Oral Exam (CDT-D0120), and 73.63% of these exam were documented as a periodic exam by the dental provider.¹⁷ Among these members, the following dental exam components were documented in the dental record on the exam DOS:

Extraoral/Oral Cavity/Periodontal/Occlusion Exam

Overall, all of the infants and toddlers as well as all the preschool children had an oral cavity exam documented in the dental record, as did all except 2 school-aged children and 2 adolescents.

Health History Obtained

Only one school-aged child and one adolescent had none of the health history elements documented (2.20% overall), while in total, 81.32% had a medical history review documented, including all of the infants and toddlers, 90.48% of the preschool children, 75.68% of the school-aged children and 77.78% of the adolescents. Dental home status was also well documented overall (82.42%), including for infants and toddlers (66.67%), preschool children (80.95%), school-aged children (89.19%), and for adolescents (77.78%).

Chief Complaint

Overall, exam (84.62%) and prophylaxis (82.42%), respectively, were the most frequently documented reasons for the dental visit, while 20.88% of members overall had "recall" documented as the visit reason, and only 4 (4.40%) members did not have the reason for the visit documented.

Clinical Exam Components

Overall, all of the infants and toddlers as well as all the preschool children had at least one clinical exam component documented in the dental record, as did all except 2 school-aged children and 2 adolescents. Overall, 92.31% of members had documentation concerning dentition, i.e., color or form, including all the infants and toddler as well as all the preschool children, 89.19% of the school-aged children and 88.89% of the adolescents.

Caries Risk Assessment

Overall, 76.92% of members had at least one element of a caries risk assessment documented, including 83.33% of infants and toddlers, 66.67% of preschool children, 75.68% of school-aged children, and 85.19% of adolescents. The majority (58.24%) of members overall did not have the level of risk documented, while almost 10% overall were documented to have a high caries risk, including one preschool child, five school-aged children and three adolescents. The biological, protective, and clinical findings caries risk elements were not frequently documented overall (93.41%, 96.70%, and 63.74%, respectively), while 28.57% of all members had visible cavities documented.

¹⁷ Three members IPRO IDS C95, P249 and P314, had both a comprehensive and a periodic exam claim submitted on the same DOS.
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Fluoride Assessment

Overall, only one preschool child and two school-aged children had a fluoride assessment documented (3.30%), and only the preschool child had the fluoride source documented.

Prophylaxis

Overall, nearly all (97.80%) members with a periodic exam claim submission had documentation of prophylaxis in the dental record, including all the infants and toddlers as well as all the adolescents; only one preschool and one school-aged child did not have prophylaxis documented in the dental record.

Topical Fluoride Application

Topical fluoride application was documented for the majority (82.42%) of members overall, including 66.67% of infants and toddlers, 80.95% of preschool children, 86.49% of school-aged children, and 81.48% of adolescents.

Behavioral Assessment

Just over one-third (35.16%) of all members overall did not have a behavior assessment documented, and only one infant or toddler, and two preschool children were assessed as non-cooperative.

Anticipatory Guidance

Overall, 81.32% of members with a periodic exam claim had no nutrition or diet counseling documented, and in total, only 17 (18.68%) members had general nutrition guidance documented, including 33.33% of infants and toddlers, 28.57% of preschool children, 16.22% of school-aged children and 11.11% of adolescents. Overall, only one adolescent had general safety counseling documented. The majority (74.73%) of members overall had general oral hygiene counseling documented, including 83.33% of infants and toddlers, 85.71% of preschool children, 67.57% of school-aged children and 74.07% of adolescents. A total of 11 (12.09%) members were counseled to floss daily, 6 (6.59%) members were counseled to brush twice daily, and 1 (1.10%) adolescent was advised to use a soft toothbrush.

Claim Validation

Overall, a Periodic Oral Evaluation (CDT-D0120) claim code was submitted for 15.85% (91/574) of the study sample (Table 6). A periodic dental exam should minimally include documentation of at least one component of a health history, such as a review of past medical history, at least one clinical exam component, such as dentition, a chief complaint or reason for the exam, and prophylaxis. A review of the dental records for those members for whom the periodic exam claim code was submitted shows the majority (87.91%) overall, had dental record documentation meeting the minimum criteria for a periodic exam, including 100% of infants and toddlers, 95.24% of preschool children, 86.49% of school-aged children, and 81.48% of adolescents.¹⁸

¹⁸ One Aetna/Coventry member (age 12 years), had both a comprehensive exam claim and a periodic exam claim submitted on the same exam DOS, and this member had all components of a comprehensive/periodic exam documented in the dental record. Claims data from IPRO's Data Warehouse show the comprehensive exam claim was paid and the periodic exam claim was not paid. This member was removed from the periodic exam validation above, i.e., the number of adolescents with "all elements of a periodic exam" was reduced from 23 to 22.

Table 6: Oral Exam/Periodic Oral Evaluation Dental Record Documentation by Age Group

Periodic Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Periodic Oral Evaluation claim code (D0120) (n = 91)	6	1.17%	21	16.03%	37	19.37%	27	13.92%	91	15.85%
Identified by dental provider as a periodic oral evaluation in dental record	4	66.67%	15	71.43%	30	81.08%	18	66.67%	67	73.63%
Extraoral/Oral cavity/Periodontal/Occlusion exam	n = 6		n = 21		n = 37		n = 27		n = 91	
Yes	6	100.00%	21	100.00%	35	94.59%	25	92.59%	87	95.60%
No	0	0.00%	0	0.00%	2	5.41%	2	7.41%	4	4.40%
Health history obtained	n = 6		n = 21		n = 37		n = 27		n = 91	
Medical history reviewed	6	100.00%	19	90.48%	28	75.68%	21	77.78%	74	81.32%
Positive medical issue	1	16.67%	3	14.29%	7	18.92%	4	14.81%	15	16.48%
Hospitalization/surgery	1	16.67%	5	23.81%	6	16.22%	4	14.81%	16	17.58%
Immunization status	0	0.00%	2	9.52%	0	0.00%	0	0.00%	2	2.20%
Allergies status	3	50.00%	12	57.14%	12	32.43%	12	44.44%	39	42.86%
Medication status	3	50.00%	10	47.62%	10	27.03%	8	29.63%	31	34.07%
Antibiotic prophylaxis	0	0.00%	1	4.76%	0	0.00%	0	0.00%	1	1.10%
Tobacco use assessment	0	0.00%	4	19.05%	2	5.41%	7	25.93%	13	14.29%
Positive tobacco use	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Past dental history	0	0.00%	5	23.81%	6	16.22%	8	29.63%	19	20.88%
Dental home status	4	66.67%	17	80.95%	33	89.19%	21	77.78%	75	82.42%
No dental home documented	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	0	0.00%	0	0.00%	1	2.70%	1	3.70%	2	2.20%
Chief complaint	n = 6		n = 21		n = 37		n = 27		n = 91	
Pain	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Initial visit/establish dental home	1	16.67%	2	9.52%	0	0.00%	0	0.00%	3	3.30%
Acute trauma	0	0.00%	0	0.00%	0	0.00%	0	3.70%	0	0.00%
Second opinion/referral	0	0.00%	0	0.00%	0	0.00%	1	3.70%	1	1.10%
Cleaning/prophylaxis	4	66.67%	17	80.95%	31	83.78%	23	85.19%	75	82.42%
Restorative care	0	0.00%	0	0.00%	1	2.70%	2	7.41%	3	3.30%
Recall	2	33.33%	5	23.81%	5	13.51%	7	25.93%	19	20.88%
Swelling	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Not documented	0	0.00%	0	0.00%	3	8.11%	1	3.70%	4	4.40%
Exam	3	50.00%	19	90.48%	31	83.78%	24	88.89%	77	84.62%

Periodic Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Periodic Oral Evaluation claim code (D0120) (n = 91)	6	1.17%	21	16.03%	37	19.37%	27	13.92%	91	15.85%
Other	0	0.00%	2	9.52%	1	2.70%	0	0.00%	3	3.30%
None	1	16.67%	0	0.00%	1	2.70%	0	0.00%	2	2.20%
Clinical exam components	n = 6		n = 21		n = 37		n = 27		n = 91	
Normal occlusion (bite test)	3	50.00%	10	47.62%	12	32.43%	11	40.74%	36	39.56%
Examine maxillary incisors	1	16.67%	5	23.81%	9	24.32%	13	48.15%	28	30.77%
Upper/Lower lip/Buccal mucosa	5	83.33%	16	76.19%	25	67.57%	19	70.37%	65	71.43%
Plaque accumulation/Gum line exam	4	66.67%	13	61.90%	25	67.57%	24	88.89%	66	72.53%
Pressure point tenderness	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fissures	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Palate	5	83.33%	14	66.67%	27	72.97%	21	77.78%	67	73.63%
Tongue	5	83.33%	15	71.43%	28	75.68%	22	81.48%	70	76.92%
Oropharynx	4	66.67%	14	66.67%	27	72.97%	22	81.48%	67	73.63%
Dental exam (color, form, number)/Caries	6	100.00%	21	100.00%	33	89.19%	24	88.89%	84	92.31%
TMJ	4	66.67%	9	42.86%	16	43.24%	15	55.56%	44	48.35%
Neck/Lymph	3	50.00%	8	38.10%	14	37.84%	18	66.67%	43	47.25%
None of the above	0	0.00%	0	0.00%	2	5.41%	2	7.41%	4	4.40%
Caries risk assessment	n = 6		n = 21		n = 37		n = 27		n = 91	
No	1	16.67%	7	33.33%	9	24.32%	4	14.81%	21	23.08%
Yes	5	83.33%	14	66.67%	28	75.68%	23	85.19%	70	76.92%
Yes, high risk	0	0.00%	1	4.76%	5	13.51%	3	11.11%	9	9.89%
Yes, moderate risk	1	16.67%	1	4.76%	1	2.70%	3	11.11%	6	6.59%
Yes, low risk	0	0.00%	1	4.76%	1	2.70%	0	0.00%	2	2.20%
Yes, risk level not documented	4	66.67%	11	52.38%	21	56.76%	17	62.96%	53	58.24%
Elements of caries risk documented	n = 6		n = 21		n = 37		n = 27		n = 91	
Biological										
Caregiver has active caries	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Low socioeconomic status	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Child has >3 sugar-containing snacks or beverages/day	0	0.00%	1	4.76%	0	0.00%	1	3.70%	2	2.20%
Put to bed with a bottle	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Child has special health care needs	1	16.67%	0	0.00%	1	2.70%	1	3.70%	3	3.30%

Periodic Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Periodic Oral Evaluation claim code (D0120) (n = 91)	6	1.17%	21	16.03%	37	19.37%	27	13.92%	91	15.85%
Child is a recent immigrant	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	5	83.33%	20	95.24%	35	94.59%	25	92.59%	85	93.41%
Protective										
Non-fluoride water source	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Poor oral hygiene	0	0.00%	1	4.76%	2	5.41%	0	0.00%	3	3.30%
No dental home/care	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No topical fluoride history	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	6	100.00%	20	95.24%	35	94.59%	27	100.00%	88	96.70%
Clinical findings										
White spot lesions/enamel defects	0	0.00%	0	0.00%	0	0.00%	1	3.70%	1	1.10%
Visible cavities/fillings	1	16.67%	5	23.81%	11	29.73%	9	33.33%	26	28.57%
Plaque on teeth	1	16.67%	1	4.76%	2	5.41%	3	11.11%	7	7.69%
Elevated <i>Mutans streptococci</i> levels	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Defective restorations	0	0.00%	1	4.76%	0	0.00%	0	0.00%	1	1.10%
Wearing an intraoral appliance	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
None	4	66.67%	15	71.43%	24	64.86%	15	55.56%	58	63.74%
Fluoride assessment documented	n = 6		n = 21		n = 37		n = 27		n = 91	
Yes	0	0.00%	1	4.76%	2	5.41%	0	0.00%	3	3.30%
No	6	100.00%	20	95.24%	35	94.59%	27	100.00%	88	96.70%
Household fluoridated water source	n = 6		n = 21		n = 37		n = 27		n = 91	
Yes	0	0.00%	1	4.76%	0	0.00%	0	0.00%	1	1.10%
No	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fluoride supplements	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Unable to determine	6	100.00%	20	95.24%	37	100.00%	27	100.00%	90	98.90%
Prophylaxis	n = 6		n = 21		n = 37		n = 27		n = 91	
Adult prophylaxis	0	0.00%	1	4.76%	0	0.00%	2	7.41%	3	3.30%
Child prophylaxis	6	100.00%	19	90.48%	36	97.30%	17	62.96%	78	85.71%
Prophylaxis	0	0.00%	0	0.00%	0	0.00%	8	29.63%	8	8.79%
Prophylaxis total	6	100.00%	20	95.24%	36	97.30%	27	100.00%	89	97.80%
Topical fluoride application	n = 6		n = 21		n = 37		n = 27		n = 91	
Adult topical application	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Periodic Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Periodic Oral Evaluation claim code (D0120) (n = 91)	6	1.17%	21	16.03%	37	19.37%	27	13.92%	91	15.85%
Child topical application	1	16.67%	5	23.81%	3	8.11%	1	3.70%	10	10.99%
Topical fluoride application (general statement/not specified)	3	50.00%	12	57.14%	29	78.38%	21	77.78%	65	71.43%
Topical fluoride application total	4	66.67%	17	80.95%	32	86.49%	22	81.48%	75	82.42%
Behavioral assessment	n = 6		n = 21		n = 37		n = 27		n = 91	
Cooperative	3	50.00%	16	76.19%	25	67.57%	12	44.44%	56	61.54%
Non-cooperative	1	16.67%	2	9.52%	0	0.00%	0	0.00%	3	3.30%
Not documented	2	33.33%	3	14.29%	12	32.43%	15	55.56%	32	35.16%
Anticipatory guidance	n = 6		n = 21		n = 37		n = 27		n = 91	
Nutrition and diet counseling										
Eat healthy snacks	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Eat less-to-no junk food or candy	0	0.00%	1	4.76%	2	5.41%	0	0.00%	3	3.30%
No soda/ sugar drinks	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Xylitol	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No sugar drinks in bed	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Wean off bottle	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Less-to-no-juice intake	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Drink tap water/only water in sippy cup	0	0.00%	1	4.76%	1	2.70%	0	0.00%	2	2.20%
General counseling	2	33.33%	6	28.57%	6	16.22%	3	11.11%	17	18.68%
None	4	66.67%	15	71.43%	31	83.78%	24	88.89%	74	81.32%
Safety counseling										
Mouth guard during sports	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Tobacco avoidance counseling	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
General counseling	0	0.00%	0	0.00%	0	0.00%	1	3.70%	1	1.10%
None	6	100.00%	21	100.00%	37	100.00%	26	96.30%	90	98.90%
Oral hygiene – general counseling										
Use fluoride toothpaste	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No sharing of utensils	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fluoridated water source or supplement	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
General counseling	5	83.33%	18	85.71%	25	67.57%	20	74.07%	68	74.73%
Use soft toothbrush	0	0.00%	0	0.00%	0	0.00%	1	3.70%	1	1.10%

Periodic Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Periodic Oral Evaluation claim code (D0120) (n = 91)	6	1.17%	21	16.03%	37	19.37%	27	13.92%	91	15.85%
Avoidance of bottle in bed	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Establish a dental home by the age of 12 month by 1st tooth	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Brush twice daily	0	0.00%	1	4.76%	4	10.81%	1	3.70%	6	6.59%
Use clean pacifier	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
If still using bottle, offer only water	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Flossing once daily flossing	0	0.00%	2	9.52%	5	13.51%	4	14.81%	11	12.09%
Regular visits with dentist (twice yearly)	0	0.00%	0	0.00%	0	0.00%	0	14.81%	0	0.00%
Dental treatments for parents	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride treatments	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	1	16.67%	3	14.29%	10	27.03%	7	25.93%	21	23.08%
Periodic Oral Evaluation claim code (D0120)	n = 6		n = 21		n = 37		n = 27		n = 91	
Percent of dental records with all elements of a periodic exam ^{1,2}	6	100.00%	20	95.24%	32	86.49%	22	81.48%	80	87.91%

¹ A Periodic exam includes the following components: At least one component documented from the Health History Section; at least one component documented from the Chief Complaint Section; At least one component documented from the Clinical Exam Components Section; Prophylaxis documented.

² One Aetna/Coventry member (age 12), had both a comprehensive exam claim and a periodic exam claim submitted on the same exam DOS, and this member had all components of a comprehensive/periodic exam documented in the dental record. Claims data from IPRO's Data Warehouse show the comprehensive exam claim was paid and the periodic exam claim was not paid. This member was removed from the periodic exam validation above, i.e., the number of adolescents with "all elements of a periodic exam" was reduced from 23 to 22.

Dark blue: total claims and dental record validation.

Preventive Services and Diagnostic and Restorative Procedures Codes submitted for Members with a Periodic Oral Exam by Age Group

None of the members, for whom a Periodic Oral Evaluation (CDT-D0120) claim was submitted, had a service or procedure claim submitted on the exam DOS for pulp capping. Members for whom a Periodic Oral Exam (CDT-D0120) claim was submitted also had claims for the following preventive services and diagnostic and restorative procedures submitted on the exam DOS (Table 7):

Prophylaxis

All but one member with a periodic exam claim also had prophylaxis claim submitted on the exam DOS; two adolescents had both adult prophylaxis and child prophylaxis claims submitted on the exam DOS. An Adult Prophylaxis claim (CDT-1110) was submitted for 13 (14.29%) members for whom a periodic exam code was submitted, and all but one preschool child were adolescents. The one preschool child and two adolescents had adult prophylaxis documented in the dental record; two of the remaining 10 adolescents had child prophylaxis documented and eight had a general prophylaxis statement in the dental record. It should be noted that two of these adolescents additionally had a child prophylaxis claim submitted on the exam DOS, but only the adult prophylaxis claim was documented in the dental record. In total, 79 (86.81%) members had child prophylaxis claims submitted with a periodic exam claim code, including 6 infants and toddlers, 19 preschool children, 37 school-aged children and 17 adolescents. All but one school-aged child had child prophylaxis documented in the dental record, and as noted above, two adolescents had both adult prophylaxis and child prophylaxis claims submitted; adult prophylaxis was documented in the dental record.

Fluoride Treatments

Overall, 93.41% of members with a periodic exam claim also had Fluoride Application claims submitted on the exam DOS. None of the members with a periodic exam claim code submitted had an Adult Topical Application of Fluoride claim (CDT-D1204) submitted on the exam DOS. Only one adolescent had a Child Topical Fluoride claim (CDT-D1203) submitted on the exam DOS and this member had child fluoride application documented in their dental record. In total 84 (92.31%) members had a Topical Fluoride Application Excluding Varnish claim (CDT-D1208) submitted on the exam DOS—none of these member had Topical Fluoride Application “Excluding Varnish” documented in the dental record; the majority (76.19%) had a general fluoride treatment statement, or abbreviation (e.g., Fl. Tx.) documented; 11.90% had a “fluoride varnish” treatment documented, and 11.90% had child fluoride treatment documented in the dental record. Only one school-aged child had a Topical Fluoride Varnish (CDT-D1206) claim submitted and topical fluoride “varnish” was documented in the dental record for this member.

Sealants

Dental sealant codes are submitted for each tooth treated. Overall, six members (6.6%) who had a periodic oral exam claim code submitted had a total of 22 claims submitted for Sealants (CDT-D1351) on the exam DOS. All of these members had at least the same number of sealants documented in the dental record as the number of sealant claims submitted, i.e., some members had more sealants documented than claims submitted but none had less.

Extractions

Only one school-aged child (1.10% of members with a periodic exam) had a claim submitted for an Extraction of Coronal Remnants (CDT-D7111), and this child had an extraction documented in the dental record.

Fillings

Only two members had fillings claims submitted on a periodic exam DOS. One school-aged child had a claim submitted for an Amalgam-One Surface, Primary or Permanent Filling (CDT-D2140) which was not documented in the dental record. One adolescent had two claims for Resin-One Surface, Anterior Fillings (CDT-D2330), and this adolescent had two fillings, resin-based composite documented in dental record; the filling locations and the surface was not documented in dental record.

X-Rays

In total, 115 x-ray claims were submitted on the same DOS as a member's periodic oral exam claim submission. Some members had multiple x-ray claims submitted on that same DOS. All the members with x-ray claims had documentation of the type and number of images in the dental record corresponding to the specific x-ray claim code except the following: for two preschool children, the provider submitted two Periapical First Image claims (CDT-D0220), but for both members an occlusal x-ray was documented in the dental record. It should be noted that the claim code for occlusal x-rays (CDT-D0240) is not on the current Kentucky DMS Dental Fee Schedule or on the Schedule in effect for the study sample. Two preschool members also had occlusal x-rays documented in the dental record although claims were submitted for Periapical, Each Additional (CDT-D0230). One adolescent had an x-ray claim submitted for one Bitewing-Two Images (CDT-D0272), but this member did not have any x-rays documented in the dental record.

Crowns

Only one school-aged child had three claims submitted for crowns on the periodic exam DOS and this member had three crown procedures documented in the dental record.

Therapeutic Pulpotomy

Only one school-aged child had a claim submitted for a Therapeutic Pulpotomy (CDT-D3220) on the periodic exam DOS and this member had the therapeutic pulpotomy treatment documented in the dental record.

Oral Hygiene Instruction

Overall, 50 members had oral hygiene instruction documented in the dental record on the periodic exam DOS, but only 2 adolescents had a claim submitted for Oral Hygiene Instruction (CDT-D1330) on the exam DOS; both adolescents had oral hygiene instruction documented in the dental record.

Pain Management

As noted earlier, neither the current Kentucky DMS Dental Fee Schedule, nor the one in effect for members in the study sample, list the claim code for an Inhaled or Intravenous Analgesia, Anti-anxiety Medication (CDT-D9230), although one school-aged child and one adolescent had this procedure claim submitted on the periodic exam DOS; both the school-aged child and the adolescent had dental record documentation of analgesia.

Table 7: Preventive and Restorative Procedures Claims/Documented Services for Members with a Periodic Oral Exam by Age Group

Members with Periodic Oral Exam Claim Preventive and Restorative Procedure Claims (Study Sample n = 574)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Preventive and Restorative Procedure Claims for Members with Periodic Oral Exam Claim (n= 91)	n = 6	10.17%	n = 21	16.03%	n = 37	19.47%	n = 27	13.92%	n = 91	15.85%
Prophylaxis/Dental cleaning	n = 6		n = 21		n = 37		n = 27		n = 91	
Total Prophylaxis/Dental claims (D1110 and D1120)	6	100.00 %	20	95.24%	37	100.00 %	29	107.41 %	92	101.10 %
Total Prophylaxis/Dental cleaning documented in dental record	6	100.00 %	20	100.00 %	36	97.30%	27	93.10%	89	96.74%
No Prophylaxis/Dental cleaning documented in dental record	0	0.00%	0	0.00%	1	2.70%	2	6.90%	3	3.26%
Number of Members with Adult Prophylaxis/Dental cleaning claim code (D1110) ¹	0	0.00%	1	4.76%	0	0.00%	12	44.44%	13	14.29%
Member had Prophylaxis documented in dental record ¹	N/A	N/A	1	100.00 %	N/A	N/A	12	100.00 %	13	100.00 %
No Prophylaxis documented in dental record ¹	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%	0	0.00%
Member had one Child Prophylaxis/Dental cleaning claim code (D1120) ¹	6	100.00 %	19	90.48%	37	100.00 %	17	62.96%	79	86.81%
Member had Child Prophylaxis documented in dental record ²	6	100.00 %	19	100.00 %	36	97.30%	15	88.24%	76	96.20%
No Prophylaxis/Dental cleaning documented in dental record	0	0.00%	0	0.00%	1	2.70%	2	11.76%	3	3.80%
Topical application fluoride/treatment	n = 6		n = 21		n = 37		n = 27		n = 91	
Total Fluoride Application claims (D1203, 1208)	5	83.33%	19	90.48%	36	97.30%	25	92.59% %	85	93.41%
Total Fluoride Applications documented in dental record	5	100.00 %	19	100.00 %	36	100.00 %	25	100.00 %	85	100.00 %
No Fluoride Application statement in dental record	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of members with one Child Topical Fluoride Application claim code (D1203)	0	0.00%	0	0.00%	0	0.00%	1	3.70%	1	1.10%
Member had one Child Topical Fluoride Application documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	1	100.00 %	1	100.00 %
No Fluoride Application statement in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Number of members with one Topical Fluoride Application claim code (D1208_Exc. Varnish)	5	83.33%	19	90.48%	36	97.30%	24	88.89%	84	92.31%

Members with Periodic Oral Exam Claim Preventive and Restorative Procedure Claims (Study Sample n = 574)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Preventive and Restorative Procedure Claims for Members with Periodic Oral Exam Claim (n= 91)	n = 6	10.17%	n = 21	16.03%	n = 37	19.47%	n = 27	13.92%	n = 91	15.85%
Member had Topical Application Fluoride/ Treatment documented in dental record ¹⁹	5	100.00 %	19	100.00 %	36	100.00 %	24	100.00 %	84	100.00 %
No Topical Fluoride Application documented in dental record	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride varnish	n = 6		n = 21		n = 37		n = 27		n = 91	
Number of members with one Topical Fluoride Varnish claim code (D1206)	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Member had one Topical Fluoride Varnish documented in dental record	N/A	N/A	N/A	N/A	1	100.00 %	N/A	N/A	1	100.00 %
No Topical Fluoride Varnish documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Dental sealants (per tooth)	n = 6		n = 21		n = 37		n = 27		n = 91	
Total number of Sealants claim codes (D1351) for six members	0	0.00%	0	0.00%	20	54.05%	2	7.41%	22	24.18%
Total Sealants documented in dental record	N/A	N/A	N/A	N/A	20	100.00 %	2	100.00 %	22	100.00 %
No Dental Sealants documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Extractions	n = 6		n = 21		n = 37		n = 27		n = 91	
Number of members with one Extractions of Coronal Remnants claim code (D7111)	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Member had one Extraction of Coronal Remnants documented in dental record	N/A	N/A	N/A	N/A	1	100.00 %	0	0.00%	1	100.00 %
No Extractions documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Fillings	n = 6		n = 21		n = 37		n = 27		n = 91	
Total Fillings Claims (D2140 and D2330) for two members	0	0.00%	0	0.00%	1	2.70%	2	7.41%	3	3.00%
Total Fillings documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	2	100.00 %	2	66.67%

¹⁹ None of the 84 members with a Topical Fluoride Application Excluding Varnish claim (CDT-D1208), including 24 adolescents, 36 school-aged children, 19 preschool children and 5 infants and toddlers had “excluding varnish” documented in the dental record. Of the 84, 64 members in total had a general fluoride treatment statement (21, adolescents, 29 school-aged children, 12 preschool children, and 2 infants and toddlers), 10 members in total had “fluoride varnish” documented and 10 members had “child” fluoride documented.

Members with Periodic Oral Exam Claim Preventive and Restorative Procedure Claims (Study Sample n = 574)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Preventive and Restorative Procedure Claims for Members with Periodic Oral Exam Claim (n= 91)	n = 6	10.17%	n = 21	16.03%	n = 37	19.47%	n = 27	13.92%	n = 91	15.85%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	1	100.00 %	0	0.00%	1	33.33%
Fillings Amalgam-One Surface, Primary or Permanent claim code (D2140)	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Member had one Filling Amalgam material documented in dental record; (one surface/primary or permanent not documented in dental record) ⁴	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	1	100.00 %	N/A	N/A	1	100.00 %
Number of Fillings Resin One Surface, Anterior claim code (D2330) for one member	0	0.00%	0	0.00%	0	0.00%	2	7.41%	2	2.20%
Member had two Fillings, Resin-Based composite documented in dental record; location and one surface not documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	2	100.00 %	2	100.00 %
No Fillings documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Diagnostic imaging/X-Rays	n = 6		n = 21		n = 37		n = 27		n = 91	
Total Diagnostic imaging/X-rays	3	50.00%	27	128.57 %	56	151.35 %	29	107.41 %	115	126.38 %
Total X-rays documented in dental record	3	100.00 %	27	100.00 %	56	100.00 %	28	96.55%	114	99.13%
No X-rays documented in dental record	0	0.00%	0	0.00%	0	0.00%	1	3.45%	1	0.87%
Number of members with one X-rays Intraoral Periapical First Image claim codes (D0220)	1	16.67%	10	47.62%	10	27.03%	2	7.41%	23	25.27%
Member had one X-ray Intraoral Periapical First Image documented in dental record ⁵	1	100.00 %	10	100.00 %	10	100.00 %	2	100.00 %	23	100.00 %
No X-rays documented in dental record ⁵	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Number of X-ray Intraoral Periapical each additional codes (D0230) claims for 21 members	1	16.67%	10	47.62%	11	29.73%	0	0.00%	22	24.18%
Member had X-ray Intraoral Periapical each additional documented in the dental record ⁵	1	100.00 %	10	100.00 %	11	100.00 %	N/A	N/A	22	100.00 %
No X-rays documented in dental record ⁵	0	0.00%	0	0.00%	0	0.00%	N/A	N/A	0	0.00%
Number of members with one X-rays Bitewing-Two Images claim codes (D0272) ⁶	1	16.67%	7	33.33%	24	64.86%	12	44.44%	44	48.35%

Members with Periodic Oral Exam Claim Preventive and Restorative Procedure Claims (Study Sample n = 574)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Preventive and Restorative Procedure Claims for Members with Periodic Oral Exam Claim (n= 91)	n = 6	10.17%	n = 21	16.03%	n = 37	19.47%	n = 27	13.92%	n = 91	15.85%
Member had one X-ray Bitewing-Two Images documented in the dental record ⁶	1	100.00 %	7	100.00 %	24	100.00 %	11	91.67%	43	97.73%
No X-rays documented in dental record	0	0.00%	0	0.00%	0	0.00%	1	8.33%	1	2.27%
Number of members with one X-rays Bitewing-Four Images claim codes (D0274)	0	0.00%	0	0.00%	4	10.81%	7	25.93%	11	12.09%
Member had one x-ray Bitewing Four Images documented in the dental record	N/A	N/A	N/A	N/A	4	100.00 %	7	100.00 %	11	100.00 %
No X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Number of members with one X-rays Panoramic Image claim codes (D0330)	0	0.00%	0	0.00%	7	18.92%	8	29.63%	15	16.48%
Member had one X-ray Panoramic Image documented in the dental record	N/A	N/A	N/A	N/A	7	100.00 %	8	100.00 %	15	100.00 %
No Diagnostic Imaging/X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Crown	n = 6		n = 21		n = 37		n = 27		n = 91	
Number of Crown claims code (D2930) for one member	0	0.00%	0	0.00%	3	8.11%	0	0.00%	3	3.30%
Member had 3 Crowns documented in dental record	N/A	N/A	N/A	N/A	3	100.00 %	N/A	N/A	3	100.00 %
No Crowns documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Therapeutic pulpotomy	n = 6		n = 21		n = 37		n = 27		n = 91	
Number of members with one Therapeutic Pulpotomy claim code (D3220)	0	0.00%	0	0.00%	1	2.70%	0	0.00%	1	1.10%
Member had Therapeutic Pulpotomy documented in dental record	N/A	N/A	N/A	N/A	1	100.00 %	N/A	N/A	1	100.00 %
No Therapeutic Pulpotomy documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Oral Hygiene Instructions	n = 6		n = 21		n = 37		n = 27		n = 91	
Number of members with One Oral Hygiene Instruction claim code (D1330)	0	0.00%	0	0.00%	0	0.00%	2	7.41%	2	2.20%
Member with a D1330 claim submitted had Oral Hygiene Instruction documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	2	100.00 %	2	100.00 %

Members with Periodic Oral Exam Claim Preventive and Restorative Procedure Claims (Study Sample n = 574)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Preventive and Restorative Procedure Claims for Members with Periodic Oral Exam Claim (n= 91)	n = 6	10.17%	n = 21	16.03%	n = 37	19.47%	n = 27	13.92%	n = 91	15.85%
No Oral Hygiene Instruction documented in dental record for member with a claim	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Oral Hygiene Instruction documented in dental record for members without a D1330 claim submitted	2	33.33%	10	47.62%	21	56.76%	15	55.56%	48	52.75%
Pain Management	n = 6		n = 21		n = 37		n = 27		n = 91	
Number of members with one Analgesia claim code (D9230)	0	0.00%	0	0.00%	1	2.70%	1	3.70%	2	2.20%
Member had Analgesia documented in the dental record	N/A	N/A	N/A	N/A	1	100.00 %	1	100.00 %	2	100.00 %
No Pain Management documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%

¹ The Kentucky Dental Fee Schedule notes that an adult code should be used for members over the age of 13, and therefore should not have been submitted for the one preschool member. Of the remaining 12 members with an adult prophylaxis claim, 2 members had adult prophylaxis documented, 2 members had child prophylaxis documented, and 8 had a general prophylaxis statement documented in the dental record. The two adolescents with child prophylaxis documented in the dental record had an additional child prophylaxis claim submitted (IPRO IDs P348 and P351); only the adult claims were validated based on the adolescents' ages.

² One school-aged member did not have prophylaxis documented in the dental record (P305).

³ Two adolescents with both a child and an adult prophylaxis claim and one school-age member did not have a Child Prophylaxis claim (D1120) validated.

⁴ The one school age member (IPRO ID H199) did not have a filling documented in dental record.

⁵ Two members in the preschool age group did not have periapical x-rays documented; both members (IPRO IDs P261 and H137) had 2 occlusal x-rays documented (occlusal x-rays are not listed on the Kentucky Dental Fee Schedule).

⁶ One adolescent member (IPRO ID P336) did not have a Bitewing 2 image x-ray documented in dental record.

N/A: not applicable.

Brown: no dental record documentation to validate claim; dark blue: total claims and dental record validation; light blue: specific claim code validation within service and/or procedure type; light green: dental record documentation of interest.

Oral Exam Type/Limited Oral Evaluation, Problem Focused by Age Group

In contrast to a comprehensive oral exam, which is recommended as one of the bi-annual visits if visiting a new practice, or if there has been a substantial change in health history since the most recent visit, a limited oral evaluation should address an acute problem, such as a tooth eruption, injury or infection. In total, 20 (3.48%) study sample members had a claim code submitted for a Limited Oral Evaluation (CDT-D0140) including 1 infant, 2 school-aged children, and 17 adolescents; no preschool children had a limited oral exam claim submitted (Table 8). Among these members, the following dental exam components were documented in the dental record:

Extraoral/Oral Cavity/Periodontal/Occlusion Exam

The infant and one of the adolescents did not have an oral exam documented in the dental record.

Health History Obtained

Three of the adolescents did not have any elements of a health history documented, although the infant, both school-aged children, and 11 of the 17 adolescents (64.71%) had a medical history review documented in the dental record.

Chief Complaint

Overall, all the members with limited exam claim submitted had at least one reason for the visit documented in the dental record; 60% of members overall had "pain" documented as the chief complaint, more than half (55%) had "exam" documented, 15% had "restorative care," and 10% had "second opinion or referral."

Clinical Exam Components

The infant and one (5.88%) of the 17 adolescents did not have any clinical exam components documented, whereas both school-aged children and 16 (94.12%) of the 17 adolescents had documentation related to dentition, such as form or color documented.

Caries Risk Assessment/Elements

Overall, 7 of the 20 members did not have any elements of a caries risk assessment documented in the dental record, including the one infant, one of the school-aged children and 5 of the adolescents. The risk level was not documented for the one school-aged child and the 12 adolescents with an element of caries risk documented. None of the members had a biological caries risk element documented. For the protective elements, only two adolescents had poor oral hygiene documented and one adolescent had no topical fluoride history documented. For clinical caries risk findings, five adolescents had visible caries, and one had a defective restoration documented.

Fluoride Assessment

Among the 20 members with a limited oral exam, only one (5.00%) adolescent had a fluoride assessment documented, and the source of fluoridation could not be determined from any of these members' dental record documentation.

Prophylaxis and Topical Fluoride

None of the 20 members with a limited oral exam claim had documentation of prophylaxis or of a topical fluoride application on the exam DOS.

Behavioral Assessment

Five members—1 infant, 1 of the school-aged children, and 3 of the adolescents—had a cooperative behavior assessment documented, while 15 (75.00%) members did not have a behavior assessment documented.

Anticipatory Guidance

Anticipatory guidance was not frequently documented for members having a limited exam. Only one adolescent had general nutrition and general safety counseling documented; only the infant and three adolescents had general oral hygiene counseling documented.

Claim Validation

Overall, a Limited Oral Evaluation (CDT-D0140) claim code was submitted for 3.48% of the study sample (Table 8). A limited dental exam should minimally include documentation of at least one component of a clinical exam, such as dentition, as well as the chief complaint or reason for the exam, to indicate the acute problem being addressed. A review of the dental records for those members for whom the Limited Oral Evaluation (CDT- D0140) claim code was submitted shows the majority (17/20, 85.00%) had dental record documentation meeting the minimum criteria for a limited exam, including 100% of school-aged children and 88.24% of adolescents; the one infant did not have any clinical exam components documented and therefore did not meet the exam validation criteria.

Table 8: Oral Exam/Limited Oral Evaluation Dental Record Documentation by Age Group

Limited Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 members)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Identified by dental provider as a limited oral evaluation in dental record	1	100.00%	0	0.00%	1	50.00%	13	76.47%	15	75.00%
Extraoral/Oral cavity/Periodontal/Occlusion exam	n = 1		n = 0		n = 2		n = 17		n = 20	
Yes	0	0.00%	0	0.00%	2	100.00%	16	94.12%	18	90.00%
No	1	100.00%	0	0.00%	0	0.00%	1	5.88%	2	10.00%
Health history obtained	n = 1		n = 0		n = 2		n = 17		n = 20	
Medical history reviewed	1	100.00%	0	0.00%	2	100.00%	11	64.71%	14	70.00%
Positive medical issue	0	0.00%	0	0.00%	0	50.00%	1	5.88%	1	5.00%
Hospitalization/Surgery	0	0.00%	0	0.00%	1	50.00%	4	23.53%	5	25.00%
Immunization status	1	100.00%	0	0.00%	0	0.00%	0	0.00%	1	5.00%
Allergies status	1	100.00%	0	0.00%	1	50.00%	4	23.53%	6	30.00%
Medication status	1	100.00%	0	0.00%	1	50.00%	5	29.41%	7	35.00%
Antibiotic prophylaxis	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Tobacco use assessment	0	0.00%	0	0.00%	1	50.00%	2	11.76%	3	15.00%
Positive tobacco use	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Past dental history	0	0.00%	0	0.00%	1	50.00%	3	17.65%	4	20.00%
Dental home status	0	0.00%	0	0.00%	2	100.00%	11	64.71%	13	65.00%
No dental home documented	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	0	0.00%	0	0.00%	0	0.00%	3	17.65%	3	15.00%
Chief complaint	n = 1		n = 0		n = 2		n = 17		n = 20	
Pain	0	0.00%	0	0.00%	1	50.00%	11	64.71%	12	60.00%
Initial visit/establish dental home	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Acute trauma	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Second opinion/ referral	1	100.00%	0	0.00%	0	0.00%	1	5.88%	2	10.00%
Cleaning/prophylaxis	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Restorative care	0	0.00%	0	0.00%	1	50.00%	2	11.76%	3	15.00%
Recall	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Swelling	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%

Limited Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 members)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Not documented	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
Exam	0	0.00%	0	0.00%	2	100.00%	9	52.94%	11	55.00%
Other	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
None	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Clinical exam components	n = 1		n = 0		n = 2		n = 17		n = 20	
Normal occlusion (bite test)	0	0.00%	0	0.00%	1	50.00%	0	0.00%	1	5.00%
Examine maxillary incisors	0	0.00%	0	0.00%	1	50.00%	0	0.00%	1	5.00%
Upper/Lower lip/Buccal mucosa	0	0.00%	0	0.00%	2	100.00%	2	11.76%	4	20.00%
Plaque accumulation/Gum line exam	0	0.00%	0	0.00%	1	50.00%	1	5.88%	2	10.00%
Pressure point tenderness	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
Fissures	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Palate	0	0.00%	0	0.00%	2	100.00%	1	5.88%	3	15.00%
Tongue	0	0.00%	0	0.00%	2	100.00%	1	5.88%	3	15.00%
Oropharynx	0	0.00%	0	0.00%	2	100.00%	1	5.88%	3	15.00%
Dental exam (color, form, number)/Caries	0	0.00%	0	0.00%	2	100.00%	16	94.12%	18	90.00%
TMJ	0	0.00%	0	0.00%	1	50.00%	0	0.00%	1	5.00%
Neck/Lymph	0	0.00%	0	0.00%	1	50.00%	0	0.00%	1	5.00%
None of the above	1	100.00%	0	0.00%	0	0.00%	1	5.88%	2	10.00%
Caries risk assessment/Elements documented during the visit	n = 1		n = 0		n = 2		n = 17		n = 20	
No	1	100.00%	0	0.00%	1	50.00%	5	29.41%	7	35.00%
Yes	0	0.00%	0	0.00%	1	50.00%	12	70.59%	13	65.00%
Yes, high risk	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Yes, moderate risk	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Yes, low risk	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Yes, risk level not documented	0	0.00%	0	0.00%	1	50.00%	12	70.59%	13	65.00%
Elements of caries risk documented	n = 1		n = 0		n = 2		n = 17		n = 20	
Biological										
Caregiver has active caries	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Low socioeconomic status	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Limited Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 members)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Child has >3 sugar-containing snacks or beverages/day	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Put to bed with a bottle	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Child has special health care needs	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Child is a recent immigrant	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	1	100.00%	0	0.00%	2	100.00%	17	100.00%	20	100.00%
Protective										
Non-fluoride water source	0	0.00%	0	0.0%	0	0.00%	0	0.00%	0	0.00%
Poor oral hygiene	0	0.00%	0	0.0%	0	0.00%	2	11.76%	2	10.00%
No dental home/care	0	0.00%	0	0.0%	0	0.00%	0	0.00%	0	0.00%
No topical fluoride history	0	0.00%	0	0.0%	0	0.00%	1	5.88%	1	5.00%
None	1	100.00%	0	0.0%	2	100.00%	14	82.35%	17	85.00%
Clinical findings										
White spot lesions/enamel defects	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Visible cavities/fillings	0	0.00%	0	0.00%	0	0.00%	5	29.41%	5	25.00%
Plaque on teeth	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Elevated <i>Mutans streptococci</i> levels	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Defective restorations	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
Wearing an intraoral appliance	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	1	100.00%	0	0.00%	2	100.00%	12	70.59%	15	75.00%
Fluoride assessment documented	n = 1		n = 0		n = 2		n = 17		n = 20	
Yes	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
No	1	100.00%	0	0.00%	2	100.00%	16	94.12%	19	95.00%
Household fluoridated water source	n = 1		n = 0		n = 2		n = 17		n = 20	
Yes	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fluoride Supplements	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
UTD	1	100.00%	0	0.00%	2	100.00%	17	100.00%	20	100.00%
Prophylaxis	n = 1		n = 0		n = 2		n = 17		n = 20	
Adult prophylaxis	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Limited Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 members)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Child prophylaxis	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Prophylaxis	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Prophylaxis total	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride application	n = 1		n = 0		n = 2		n = 17		n = 20	
Adult topical application	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Child topical application	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride application (general statement/not specified)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride application total	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Behavioral assessment	n = 1		n = 0		n = 2		n = 17		n = 20	
Cooperative	1	100.00%	0	0.00%	1	50.00%	3	17.65%	5	25.00%
Non-cooperative	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Not documented	0	0.00%	0	0.00%	1	50.00%	14	82.35%	15	75.00%
Anticipatory guidance	n = 1		n = 0		n = 2		n = 17		n = 20	
Nutrition and diet counseling										
Eat healthy snacks	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Eat less-to-no junk food or candy	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No soda/ sugar drinks	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Xylitol	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No sugar drinks in bed	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Wean off bottle	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Less-to-no-juice intake	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Drink tap water/only water in sippy cup	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
General counseling	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
None	1	100.00%	0	0.00%	2	100.00%	16	94.12%	19	95.00%
At least one of the above documented										
Safety counseling										
Mouth guard during sports	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Tobacco avoidance counseling	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
General counseling	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%

Limited Oral Evaluation (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 members)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
None	1	100.00%	0	0.00%	2	100.00%	16	94.12%	19	95.00%
At least one of the above documented										
Oral hygiene –general counseling										
Use fluoride toothpaste	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
No sharing of utensils	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fluoridated water source or supplement	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
General counseling	1	100.00%	0	0.00%	0	0.00%	3	17.65%	4	20.00%
Use soft toothbrush	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Avoidance of bottle in bed	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Establish a dental home by the age of 12 month by 1st tooth	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Brush twice daily	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Use clean pacifier	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
If still using bottle, offer only water	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Flossing once daily flossing	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Regular visits with dentist (twice yearly)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Dental treatments for parents	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Topical fluoride treatments	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
None	0	0.00%	0	0.00%	2	100.00%	14	82.35%	16	80.00%
Limited Oral Evaluation claim code (D0140)	n = 1		n = 0		n = 2		n = 17		n = 20	
Percent of dental records with all elements of a Limited Oral Exam ¹	0	0.00%	N/A	N/A	2	100.00%	15	88.24%	17	85.00%

¹ A limited oral exam includes the following components: At least one component documented from the Chief Complaint Section; at least one component documented from the Clinical Exam Components Section.

Dark blue: total claims and dental record validation.

Preventive Services and Diagnostic and Restorative Procedures Codes Submitted for Members with a Limited Oral Evaluation by Age Group

None of the members with a claim for a limited oral exam had a service or procedure claim submitted on the exam DOS for the following: prophylaxis, fluoride treatment/varnish, sealants, crowns, therapeutic pulpotomy, pulp capping, dental pain management, or oral hygiene instruction; it should be noted that five adolescent members with a limited exam had analgesia documented in the dental record, although a claim was not submitted for the service.

Members, for whom a Limited Oral Exam (CDT-D0140) claim was submitted, additionally had claims for the following diagnostic and restorative procedures submitted on the exam DOS (Table 9):

Extractions

In total, two (10.00%) members—one school-aged child and one adolescent—had a claim submitted for an extraction during a limited oral exam, and both these members had an extraction documented in the dental record.

Fillings

One adolescent member had one filling claim (CDT-D2332) submitted on the limited oral exam DOS, and the filling type and location was documented in the dental record for this member; the number of surfaces treated was not documented in the dental record.

X-Rays

In total, 27 x-ray claims were submitted for members on the same DOS as a limited oral exam, and all of these claims were validated by dental record documentation for the x-ray type. Adolescents had the majority of total X-rays (23/27) and most of these were for the First Periapical Image (CDT-D0220) claim code.

Table 9: Preventive and Restorative Procedure Claims/Documented Services for Members with a Limited Oral Exam by Age Group

Preventive and Restorative Procedure Claims Limited Oral Exam Code (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 Members with Limited Oral Exam Code)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Extractions	n = 1		n = 0		n = 2		n = 17		n = 20	
Total Extractions Claims	0	0.00%	0	0.00%	1	50.00%	1	5.88%	2	10.00%
Total Extractions documented in dental record	N/A	N/A	N/A	N/A	1	100.00%	1	100.00%	2	100.00%
No Extractions documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Number of members with one Extractions of Coronal Remnants claim code (D7111)	0	0.00%	0	0.00%	1	50.00%	0	0.00%	1	5.00%
Member had one Extraction of Coronal Remnants documented in dental record	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No Extractions documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Number of members with one Surgical Removal of erupted tool claim code (D7210)	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%
Member had one Surgical Removal of erupted tooth documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	1	100.00%	1	100.00%
No Extractions documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Fillings	n = 1		n = 0		n = 2		n = 17		n = 20	
Number of members with one Filling Resin- three surfaces, Anterior claim code (D2332)	0	0.00%	0	0.00%	0	0.00%	1	5.88%	1	5.00%

Preventive and Restorative Procedure Claims Limited Oral Exam Code (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 Members with Limited Oral Exam Code)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Member had one filling Resin Anterior documented in dental record; (three surfaces not documented in dental record)	N/A	N/A	N/A	N/A	N/A	N/A	1	100.00%	1	100.00%
No Fillings documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Diagnostic imaging/X-Rays	n = 1		n = 0		n = 2		n = 17		n = 20	
Total Diagnostic Imaging/X-rays Claims	1	100.00%	0	0.00%	3	150.00%	23	135.29%	27	135.00%
Total Diagnostic Imaging/X-rays documented in dental record	1	100.00%	N/A	N/A	3	100.00%	23	100.00%	27	100.00%
No X-rays documented in dental record	0	0.00%	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Number of members with one X-rays Intraoral Periapical First Image claim codes (D0220)	1	100.00%	0	0.00%	1	50.00%	14	82.35%	16	80.00%
Member had one X-ray Intraoral Periapical First Image documented in dental record	1	100.00%	N/A	N/A	1	100.00%	14	100.00%	16	100.00%
No X-rays documented in dental record	0	0.00%	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Number of members with one X-ray Intraoral Periapical each additional claim codes (D0230)	0	0.00%	0	0.00%	0	0.00%	2	11.76%	2	10.00%
Member had one X-ray Intraoral Periapical each additional documented in the dental record	N/A	N/A	N/A	N/A	N/A	N/A	2	100.00%	2	100.00%
No X-rays documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%

Preventive and Restorative Procedure Claims Limited Oral Exam Code (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 Members with Limited Oral Exam Code)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
Number of members with one X-ray Bitewing-Two Images claim codes (D0272)	0	0.00%	0	0.00%	1	50.00%	0	0.00%	1	5.00%
Member had one X-ray Bitewing-Two Images documented in the dental record	N/A	N/A	N/A	N/A	1	100.00%	N/A	N/A	1	100.00%
No X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	N/A	N/A	0	0.00%
Number of members with one X-ray Bitewing-Four Images claim codes (D0274)	0	0.00%	0	0.00%	0	0.00%	2	11.76%	2	10.00%
Member had one X-ray Bitewing-Four Images documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	2	100.00%	2	100.00%
No X-rays documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%
Number of members with one X-rays Panoramic Image claim codes (D0330)	0	0.00%	0	0.00%	1	50.00%	5	29.41%	6	30.00%
Member had one X-ray Panoramic Image documented in the dental record	N/A	N/A	N/A	N/A	1	100.00%	5	100.00%	6	100.00%
No Diagnostic Imaging/X-rays documented in dental record	N/A	N/A	N/A	N/A	0	0.00%	0	0.00%	0	0.00%
Pain management	n = 1		n = 0		n = 2		n = 17		n = 20	
Number of members with Analgesia claim code (D9230)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Total Pain Management documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Preventive and Restorative Procedure Claims Limited Oral Exam Code (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59)		Preschool Children (n = 131)		School-Aged Children (n = 190)		Adolescents (n = 194)		Total (n = 574)	
Limited Oral Evaluation claim code (D0140) (n = 20 Members with Limited Oral Exam Code)	1	1.69%	0	0.00%	2	1.05%	17	8.76%	20	3.48%
No Pain Management documented in dental record	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Member had Analgesia documented in the dental record without claim code D9230 submitted	N/A	N/A	N/A	N/A	N/A	N/A	5	29.41%	5	25.00%

Brown: no dental record documentation to validate claim; dark blue: total claims and dental record validation; light blue: specific claim code validation within service and/or procedure type; light green: dental record documentation of interest.

Dental Abnormalities Documented during Dental Exam by Age Group

Overall, 58.36% of members had at least one abnormality documented by the dental provider on the exam DOS (Table 10), including 37.29% of infants and toddlers, 46.56% of preschool children, 61.58% of school-aged children and 69.59% of adolescents. The most frequently documented abnormalities among these members overall were cavities (54.63%), coronal plaque (24.78%), gingivitis (19.40%), and calculus (11.94%).

Table 10: Documented Dental Abnormalities by Age Group

Dental Abnormalities (n = 574 Members in Final Study Sample)	Infants and Toddlers (n = 59) 10.27%		Preschool Children (n = 131) 22.82%		School-Aged Children (n = 190) 33.10%		Adolescents (n = 194) 33.79%		Total (n = 574)	
Dental abnormalities – documented by the provider on Exam DOS	22	37.29%	61	46.56%	117	61.58%	135	69.59%	335	58.36%
None	37	62.71%	70	53.44%	73	38.42%	59	30.41%	239	41.64%
Abnormality type	n = 22		n = 61		n = 117		n = 135		n = 335	
Cavity/Caries enamel Breakdown/Tooth decay/Fissures/Pits (decay)	12	54.55%	35	57.38%	69	58.97%	67	49.63%	183	54.63%
Calculus	0	0.00%	4	6.56%	8	6.84%	28	20.74%	40	11.94%
Coronal plaque	3	13.64%	15	24.59%	34	29.06%	31	22.96%	83	24.78%
Stains	1	4.55%	10	16.39%	3	2.56%	11	8.15%	25	7.46%
Gum loss/Recession	0	0.00%	0	0.00%	0	0.00%	1	0.74%	1	0.30%
Hairline fracture of the tooth	0	0.00%	0	0.00%	0	0.00%	1	0.74%	1	0.30%
Alveolar abnormality (jaw bones compromised)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Periapical (tooth root) abnormality	0	0.00%	1	1.64%	3	2.56%	4	2.96%	8	2.39%
Infection	0	0.00%	3	4.92%	4	3.42%	5	3.70%	12	3.58%
Impaction/Wisdom teeth/Third molars	0	0.00%	0	0.00%	1	0.85%	13	9.63%	14	4.18%
Trauma to the tooth	1	4.55%	1	1.64%	2	1.71%	3	2.22%	7	2.09%
Weakness in existing fillings, crowns, and bridgework	0	0.00%	0	0.00%	2	1.71%	2	1.48%	4	1.19%
Bone recession	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Teeth deterioration due to abnormal bite	0	0.00%	0	0.00%	0	0.00%	1	0.74%	1	0.30%
Teeth deterioration due to bruxism (teeth grinding)	1	4.55%	3	4.92%	6	5.13%	1	0.74%	11	3.28%
Teeth deterioration due to TMJ	0	0.00%	0	0.00%	0	0.00%	1	0.74%	1	0.30%
Malocclusion	3	13.64%	0	0.00%	12	10.26%	9	6.67%	24	7.16%
Gingivitis	7	31.82%	9	14.75%	18	15.38%	31	22.96%	65	19.40%
Bleeding	2	9.09%	1	1.64%	4	3.42%	16	11.85%	23	6.87%
Other	1	4.55%	4	6.56%	10	8.55%	18	13.33%	33	9.85%

Follow-up Action Plan for Dental Abnormalities

All of the 335 (58.36%) study sample members with a documented abnormality on the exam DOS had a least one follow-up plan documented in the dental record (Table 11). Most frequently, members were scheduled for a recall or follow-up exam (76.12%) to address the issues. Another frequently documented follow-up was for further testing, such as an x-ray, including 36.36% of infants and toddlers, 40.98% of preschool children, 82.05% of school-aged children and 80% of adolescents. Over two-thirds of members (68.06%) received counseling, tailored education or medication to address the problem, while 39.70% received a procedure on the same exam DOS to treat the issue. Overall, 46 members (13.73%) had a referral documented to address the identified issue, and the most frequent type of referral (41.30%) was to an orthodontist for 5 school aged children and 14 adolescents.

Table 11: Action Plan for Dental Abnormalities by Age Group

Follow-up Plan for Dental Abnormalities (n = 335 Members with Provider-Documented Dental Abnormalities)	Infants and Toddlers (n = 59) 10.27%		Preschool Children (n = 131) 22.82%		School-Aged Children (n = 190) 33.10%		Adolescents (n = 194) 33.79%		Total (n = 574)	
Dental abnormalities – documented by the provider on pre-populated DOS	22	37.29%	61	46.56%	117	61.58%	135	69.59%	335	58.36%
Action plan for dental abnormalities documented on exam visit DOS	22	100.00%	61	100.00%	117	100.00%	135	100.00%	335	100.00%
Further testing/any procedures/x-rays	8	36.36%	25	40.98%	96	82.05%	108	80.00%	237	70.75%
Addressed in practice/counseling/member education/medication/	15	68.18%	35	57.38%	85	72.65%	93	68.89%	228	68.06%
Referral (or referral in place/under care)	1	4.55%	4	6.56%	11	9.40%	30	22.22%	46	13.73%
Schedule follow-up visit/ recall exam	18	81.82%	54	88.52%	96	82.05%	87	64.44%	255	76.12%
Same-day procedure/ follow-up	3	13.64%	23	37.70%	44	37.61%	63	46.67%	133	39.70%
At least one of the above documented	22	100.00%	61	98.39%	117	100.85%	135	100.74%	335	100.00%
Referral Type	n = 1		n = 4		n = 11		n = 30		n = 46	
Dental specialists ¹										
Endodontist	0	0.00%	0	0.00%	0	0.00%	5	16.67%	5	10.87%
Oral surgeon	0	0.00%	1	25.00%	1	9.09%	5	16.67%	7	15.22%
Orthodontist	0	0.00%	0	0.00%	5	45.45%	14	46.67%	19	41.30%
Periodontist	0	0.00%	1	25.00%	0	0.00%	1	3.33%	2	4.35%
Other dental specialist	1	100.00%	2	50.00%	5	45.45%	0	0.00%	8	17.39%
Other referral	0	0.00%	2	50.00%	1	9.09%	5	16.67%	8	17.39%
Referral type not documented	0	0.00%	0	0.00%	1	9.09%	2	6.67%	3	6.52%

¹ Some members had more than one referral type.

Discussion

Dental services are an important part of comprehensive services under EPSDT and a referral to a dentist is required consistent with the state's periodicity schedule. The Kentucky Medicaid Dental Periodicity Schedule, which is based upon AAP/ADA and AAPD guidelines, illustrates the importance of early professional intervention and continuity of care based upon a set of recommendations for children who are developing normally, without identified health problems. Furthermore, recommendations should be modified for children with specific health conditions, health care needs, risk factors or any variations from normal. Therefore, the recommended schedule, services and procedures should be patient-specific and tailored to the individual needs of the child.

IPro conducted studies in 2014 and 2015 to validate EPSDT codes, and oral health assessment was identified as a gap in care. Specifically, that study identified low rates of both oral health assessments (approximately 60% of study sample members overall) and dental health referrals (approximately 16% of study sample members overall); more than a third of study sample members had neither a dental assessment nor a dental referral. In an effort to support Kentucky's ongoing focus on oral health, IPro completed this validation study to determine if dental services codes for exam type, preventive services, and diagnostic and restorative dental treatments are documented in the dental record. The results of this validation study were reported for each exam type (comprehensive, periodic and limited). It is important to note that the KDM Dental Fee Schedule has changed as of February 2016; however, this discussion will refer to the Fee schedule in place at the time of the study, unless otherwise noted.

Validation of Diagnostic Imaging Claims, Preventive Services Claims, Procedure Claims and Action Plans for Dental Abnormalities

The vast majority of preventive services, diagnostic imaging and restorative procedure claims were validated with at least a general statement, and for most, some level of detail and specificity as indicated in the dental record. Overall, the rates of documentation in the dental record of prophylaxis were high. There are some coding nuances to consider when looking at the use of the adult prophylaxis code in children; however, the overall high rate of prophylaxis documentation for the claims submitted is clinically meaningful. Topical Fluoride applications, sealants, fillings, extractions and x-rays, according to the claim code specifications were all well documented in the dental record. Action plans for provider follow-up for dental abnormalities documented on the exam DOS were validated for all members with a documented abnormality. This pattern of dental record documentation seems to support a procedure-based and problem-focused style of documentation.

Although preventive service claims were well documented in the dental record and thus validated for the study sample, the overall frequency of preventive claims submitted for sealants and oral hygiene instruction (Table 3) represented very small percentages of study sample members. This might represent missed opportunities for cavity prevention evidenced in the rate of documented cavities across all age groups.

Validation of Recommended Components of Oral Exam Types

As noted above, procedure based-documentation, diagnostic testing documentation and problem-focused documentation were found at dramatically higher rates, as compared to documentation for preventive exam and assessment components (including Anticipatory Guidance, Safety Counseling, Oral Hygiene instruction, Health History, and Caries Risk, Behavior and Fluoride Assessments).

Among the majority of study sample members who had a comprehensive oral evaluation, 78.33% had no anticipatory guidance for any element of Nutrition and Diet Counseling, 99.36% had no Safety Counseling and 34.33% no Oral Hygiene-General Counseling documented in the dental record. This represents vitally important missed opportunities to improve dental health. When looking at specific anticipatory guidance elements documented in the dental record within

these categories, many were 0% for all study members, most notably the anticipatory guidance elements specified on the Kentucky dental periodicity schedule (Establish a Dental home by the Age of 12 Months or by First Tooth and Regular Visits Every 6 Months); yet, these are vital components of Kentucky's ongoing focus on oral health. Notably, only one adolescent member in the study sample was counseled to avoid tobacco. Pediatric dental experts have identified the dental provider as having a key role in tobacco use prevention and smoking cessation treatment for the adolescent population as tobacco use places them at risk for future increased morbidity and mortality.²⁰ In most instances, at least one component of the health history was documented in the dental record; however, individual components, such as Hospitalization/Surgery History, Immunization Status, Antibiotic Prophylaxis Status, Tobacco Use Assessment and Past Dental History were documented in 25% or less of the dental records for the study sample overall (Table 4, Table 6, Table 8).

A comprehensive oral evaluation serves to establish the member as a patient, and the information gathered at this visit will be utilized in the future to provide tailored dental care to the patient. Such information should be clearly documented in the dental record to serve as a reference point and communication tool for all parties involved. The lack of documentation in the dental record creates inefficiencies, promotes duplication of efforts, and creates potential for errors. For example, only 47.85% of dental records (submitted with a Comprehensive Oral Evaluation code) had an allergy status documented. This represents significant undocumented critical information that may lead to adverse outcomes. Either the above noted abstraction items are not being addressed or provided or they are not being documented. The medical record serves as a communication tool and must be complete and accurate. Over 65% of the medical records in this study were electronic. Since it can be cumbersome to hand write all of the necessary documentation in a dental record, the use of hand-written checklists or electronic checklists added to the electronic health records system might streamline this process.

Validation of Oral Exam Types Coding

For the purposes of this validation study, a Comprehensive Oral Exam includes: 1) at least one component documented from the Health History section; 2) at least one component documented from the Chief Complaint section; 3) at least one component from the Clinical exam Components section; and 4) Prophylaxis documented. In total, 71.03% of members for whom the Comprehensive Oral Exam code was submitted had dental record documentation supporting the defined minimal components outlined above.

The AADP recommends a preventive care visit every six months with essentially the same exam components as a comprehensive oral exam. Any changes in dental or medical health since the last visit should be addressed in addition to providing age appropriate anticipatory guidance and preventive services. Therefore, for the purposes of this study, the same criteria were used to validate the claims for Periodic Oral evaluations as were used for the Comprehensive Oral evaluations. It should be noted that the Kentucky DMS Dental Fee Schedule in effect for the study sample does not include the Periodic Oral evaluation; however, the current Fee Schedule does include this code and states that it should be limited to "1 per recipient per 12 months." This is different from the AADP recommendation of every 6 months. In total, 87.91% of members for whom the Periodic Oral evaluation claim code was submitted had dental record documentation to meet the study's minimal criteria to validate the Periodic Oral evaluation claim code; this is the highest validation rate for exam type in the study. This might represent differences in how MCOs are instructing their dental providers to code dental exam visits.

In contrast to a Comprehensive Oral evaluation and Periodic Oral evaluation, a Limited Oral Evaluation was consistently found to be a problem-focused visit with supporting documentation in the dental record. There were 20 members that

²⁰ Albert, David DDS MPH, et. al. "Tobacco Use by Adolescents: The Role of the Oral Health Professional in Evidence-based Cessation Programs." *Pediatric Dentistry*—28:2, 2006:177-187.

had a claim code submitted for a Limited Oral evaluation and they were almost all adolescents. For the purposes of this study, the Limited Oral Exam evaluation was validated using the following criteria: 1) at least one component documented from the Chief Complaint section; and 2) at least one component documented from the Clinical Exam section (Table 8). In total, 85% of the members with a Limited Oral evaluation claim code had dental record documentation to validate the claim using these criteria.

Coding Issues

This validation study illustrated some variation among dental provider usage of exam claim codes by MCO. Overall, 81.18% of claims in the final study sample were for a “Comprehensive Oral Evaluation.” For three of the five MCOs, this code represented over 90% of their exam claims reviewed in the study. However, this comprehensive exam claim code represented a lower percentage of claims for two MCOs: Humana-Care Source at 67.52% and Passport Health at 53.33%. Furthermore, overall only 15.85% of the members in the study had a claim submitted for “Periodic Oral Evaluation.” The range for periodic exam claim codes submitted among plans was 0% (WellCare of Kentucky) to 44.17% (Passport Health Plan) (Table 3). This variation in coding may represent confusion among providers regarding what constitutes a comprehensive versus periodic versus limited exam, along with confusion regarding the KDM Dental Fee Schedule, as the periodic code was absent on the Kentucky Fee Schedule in place at the time of the study (note: the periodic claim code is on the current Fee Schedule). The overall percentage for the “Oral Limited Evaluation” remained relatively consistent among plans (Table 3).

Provider claim code confusion was also evident for Fluoride Application codes that changed on the revised Fee Schedule effective February 2016, as well as differences for both Fluoride and Prophylaxis codes using dental age (recommended by ADA) versus chronological age (on KDM Dental Fee Schedule).

Limitations

The major limitation of a dental record validation study is that only documented information is captured and used to validate what occurs during a dental visit. It is not possible to make the determination regarding what has been “discussed, but not documented” or “performed, but not documented.” Additionally, IPRO requested documentation for the dental exam DOS that might not have included dental hygienist documentation. Perhaps a significant portion of information pertaining to Health History, and Anticipatory Guidance, as well as Caries Risk, Behavior and Fluoride assessments is being performed by dental hygienists, or was documented on a prior DOS, and was not captured or submitted in the dental record provided. However, if the submitted exam DOS documentation did not include prior history documentation, the DOS documentation for this study should have made reference to the pre-existing documentation in the dental record as “history reviewed.”

The dental record review accepted any caries risk element documented as an indicator of a caries risk assessment, which might overstate the rate of caries risk assessments performed. The rate of caries risk elements documented could be more indicative of the pattern of problem-focused of documentation rather than a full caries risk assessment.

Nurse reviewers were instructed to abstract both specific documentation and “general statements” for certain items, such as Prophylaxis and Fluoride, in order to capture instances when abbreviations or specific coding details, such as age, were not documented by the provider in the dental record. Some items, such as x-rays and fillings, had specific coding details regarding location, surfaces treated, material, etc., which could not be validated due to incomplete documentation of the details specified within the code.

For the purposes of this study, Oral Evaluation exam type codes were validated with minimal criteria. However, important components for each exam type were frequently not documented such as allergies and need for antibiotic prophylaxis, which clearly illustrate areas in need of improvement.

Recommendations for KY DMS

- Caries Risk Assessment, Oral Hygiene Instruction and Analgesia claim codes are not included on the KDM Dental Fee Schedule; inclusion of these might improve provider awareness, performance and documentation of these services.
- Consider aligning the age specificity for Fluoride and Prophylaxis coding with the ADA standard based on age of dentition, instead of chronological age.
- Consider encouraging MCOs to develop provider education including ADA/AADP recommended exam components, the definition of oral exam types, coding changes, coding requirements (including age specificity and location details), and Fee Schedule changes.
- Consider encouraging MCOs to partner with dental providers for adolescent tobacco prevention and cessation treatment counseling.

Recommendations for MCOs

- Development and Distribution of Provider Toolkits including: 1) Age appropriate ADA Dental Exam component recommendations; 2) AADP recommendations on dental record documentation/charting; 3) Caries Risk, Fluoride and Behavior Assessments protocols and checklists; 4) Health History checklists; 5) Anticipatory Guidance checklists; and 6) definition of oral exam type codes, coding requirements and current KDMS Fee Schedule codes.
- Consider extending such toolkits to dental hygienists since they may be performing a significant portion of the anticipatory guidance, health history and Caries Risk, Fluoride and Behavior assessments.
- Consider establishing a framework to coordinate dental and primary care provider efforts to address adolescent tobacco risk and use.

Recommendations for Providers

- Consider embedding assessment tools and checklists into the dental record (paper and/or electronic).
- Promote the dental record as a communication tool, while maintaining accurate coding and efficient documentation practices.
- Partner with medical providers to enhance adolescent tobacco prevention and smoking cessation efforts with consistent messaging. Improve communication and follow-up with primary care providers upon identification of adolescent tobacco use.

References

- ¹ Centers for Medicare and Medicaid Services. Early and Periodic Screening, Diagnostic and Treatment Services. Available at <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-and-Periodic-Screening-Diagnostic-and-Treatment.html>. Accessed 11-19-15.
- ² Kentucky Cabinet for Health and Family Services, Department for Medicaid Services. Early Periodic Screening, Diagnosis and Treatment Services (EPSDT). Available at <http://chfs.ky.gov/dms/epsdt.htm>. Accessed 11-19-15.
- ³ <http://www.medicaid.gov/medicaid-chip-program-information/by-topics/benefits/dental-care.html>. Accessed 8, 20, 2016.
- ⁴ United States General Accounting Office, Report to Congressional Requesters. Medicaid: stronger efforts needed to ensure children's access to health screening services. July 2001; GAO-01-749. Available at <http://www.gao.gov/new.items/d01749.pdf>. Accessed 11-19-15.
- ⁵ Centers for Medicare and Medicaid Services Improving Oral Health Care Delivery in Medicaid and CHIP A Toolkit for States. June 2014. <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Downloads/Oral-Health-Quality-Improvement-Toolkit-for-States.pdf>. Accessed 11-19-2015.
- ⁶ The Pew Charitable Trusts. In Search of Dental Care: Two Types of Dentist Shortages Limit Children's Access to Care. http://www.pewtrusts.org/~media/legacy/uploadedfiles/pcs_assets/2013/insearchofdentalcarepdf.pdf. Accessed 11-23-2015.
- ⁷ W.K. Kellogg Foundation. Improving Access to Oral Health Care. http://www.npaihb.org/images/projects_docs/OralHealth/Improving_Access_to_Oral_Health_Care_100113_11x17.pdf. Accessed 11-23-2015.
- ⁸ The Department of Health and Human Services 2014 Annual Report on the Quality of Care for Children in Medicaid and CHIP. <http://www.medicaid.gov/medicaid-chip-program-information/by-topics/quality-of-care/downloads/2014-child-sec-rept.pdf>; <http://www.medicaid.gov/medicaid-chip-program-information/by-topics/quality-of-care/downloads/2014-child-sec-rept.pdf>. Accessed 11-23-2015.
- ⁹ Kentucky Cabinet for Health Services, Department for Medicaid Services. EPSDT SCREENING SERVICES AND EPSDT SPECIAL SERVICES POLICIES AND PROCEDURES. <http://chfs.ky.gov/NR/rdonlyres/64EFF098-5C67-48B4-8B8B-97EE2E9005BF/0/1034.pdf>. Accessed 11-19-2015.
- ¹⁰ American Academy of Pediatrics, Preventive Oral Health Intervention for Pediatricians. Available at <http://pediatrics.aappublications.org/content/122/6/1387.full>. Accessed 11-19-2015.